

europress publications
The best-selling Acorn magazine in the world
ACORN USER
The magazine for all users of 32-bit Risc OS computers
The 1994 Acorn User Awards
Creating graphical masterpieces on the Risc PC
Control and measurement in schools
The ACORN USER DISC
AUGUST 1994
Interpreter for Infocom-format Adventure Games, with two challenging games
Extended disc catalogue
Wimp programming made easy
All our regular features
VIRUS CHECKED
£2.95 AUGUST 1994 ISSUE 145
08>
9 770263 745031

Desk Top Publishing



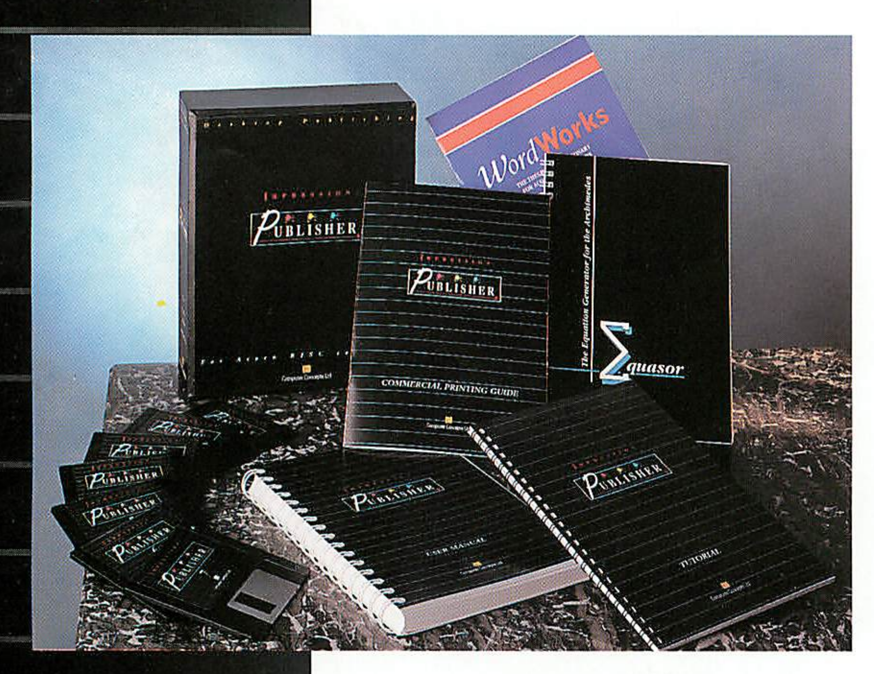
Impression Publisher is the first full colour,

Impression Publisher is the most powerful version of Impression to be released so far. Like all versions of Impression, it is designed to be a complete document handling solution in one simple to use program.

Word processing and general features

Full word processing including advanced features such as:

- Integrated spell checker with check as you type and auto-correct and abbreviation expansion as you type
- Integrated WordWorks Collins English dictionary (with explanations) and Collins Thesaurus



- Automatic paragraph numbering and re-numbering
- Very powerful system of overlaying styles and effects
- Tool bars for quick and easy access to common functions, text effects and styles
- Keep together and keep with next, for advanced text flow control
- OLE - allows simple embedding and editing of other file types
- Package includes Equasor and TableMate OLE utilities, for simple and easy mathematical equation or table creation and editing
- Drag and drop text editing

Publisher can be your everyday word processor, it is also excellent at handling long documents, even books. It's ideal for simple brochures or adverts and the most complex page layout tasks.



Graphics

Publisher provides the most powerful set of graphics tools available:

- Instant graphics pan, scale and rotate using the mouse
- On screen anti-aliasing of ArtWorks files and draw files
- Separate contrast and brightness control for each individual graphic
- Turn greyscale or other graphics into duotone (any two colours) graphics
- Colour balance control for each graphic
- Full 16 and 24-bit sprite support
- TIFF files supported and optional loaders for JPEG and PhotoCD files
- Accepts pre-separated CMYK sprites and TIFF files
- Advanced PostScript screen control of each graphic
- Individual information on each graphic - size in bytes, file types, number of colours, resolution of sprites etc.

Page layout and DTP

- 4 colour separations with on-screen preview of separations
- Separates all graphics and sprites including 16 and 24-bit RGB sprites
- Named master pages now with page bleed control
- Full control of PostScript separations - screen angle, type, density, crop and registrations marks etc
- Supports multiple device profiles for separating to different printers
- Guide frames and page grid with snap-to function for frames and text
- Irregular graphics frames with text flow around

on Acorn RISC computers

24-bit capable publishing solution for Acorn RISC computers.

Irregular frame with text flowing around

Button bar

Black & white scanned image turned into duotone (any two colours) graphic

Hyper text help showing a page describing irregular frames. Full on-line documentation is provided using this system

Irregular frame control handle. Simply drag to re-shape the frame

ArtWorks graphic in another irregular frame showing text flowing both sides of the graphic

- Frame border control and irregular frame repel margins
- Instant irregular frame *and* frame contents rotate and scale with mouse
- Transparent frames, and full colour control of all objects, including RGB and CMYK colour models and over-print options
- Drag zoom for instant magnification of any part of the page

These features are in addition to the many renowned Impression capabilities, such as unrivalled printing facilities, full on-line help (over 400 pages of on-line hyper text documentation and Acorn interactive help), speed of use and ease of use, etc, all combine to make Impression the best all round document production solution - for *all* types of document.



If you take document creation seriously, then make sure you use the best available tool for the job.



Computer Concepts Ltd

Gaddesden Place
Hemel Hempstead Herts
HP2 6EX
Tel:0442 63933
Fax: 0442 231632
EMAIL Info@CConcepts.co.uk

Price 169 + VAT (£198.57 inc)

Upgrades

From Impression II before July 22nd '94 £29 + p&p + VAT (£37.60 inc.)
From Impression II after July 22nd '94 £49 + p&p + VAT (£61.10 inc.)
From Impression Style £70 + VAT (£82.25 inc.)
From Impression Junior £79 + VAT (£92.82 inc.)
From other word processors £120 + VAT (£141.00 inc.)

JPEG, PhotoCD & Clear file loaders - £39 + VAT (£45.82 inc) for the set.

2Mbyte RAM minimum, 4Mbyte and a hard disc recommended. Fully Acorn Risc PC compatible.

E&O Prices are subject to change

This advert was created, edited, laid out, and four colour separated using only Impression Publisher

CONTENTS

Editor's letter

It's been quite fascinating sifting through all your nominations for the 1994 *Acorn User* Awards, and the results make interesting reading. Some of the categories were easy to predict – DTP and music, for example – but there are a number of surprises, which just goes to show that the Acorn market is as varied as it is exciting.

Reading through the list of companies who have won an award this year, it is apparent that some produce very high quality applications in many areas – congratulations are due to all the companies who were nominated.

We also look at Control in the classroom. It's quite nostalgic for those of us who used to own BBCs. Control is an area the Arc has been criticised in, but our round-up should silence the dissenters.

Mark Moxon, Editor

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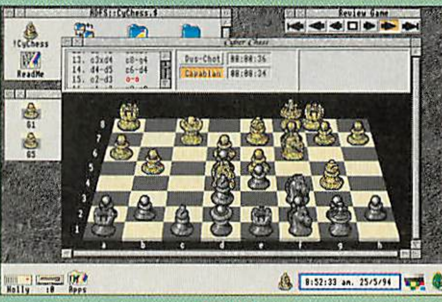
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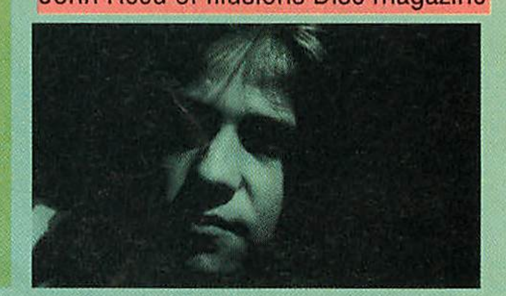
europress PUBLICATIONS

Published by Europress Publications Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP, e-mail mark @ acornusr. demon. co. uk Tel: 0625 878888 Fax: 0625 850652
Printed by Passmore International, Basildon

12 issue subscription rate: £35.40 (UK), £49 (EEC). £69 (World)

REGULARS





HANDS ON

REVIEWS



AUGUST 1994

FEATURES

Next issue on sale 11 August

ICS

051-625 1006

SOFTWARE

Price list prepared 14th June 1994

Title	Publisher	Price
10 out of 10	10 out of 10	
– Dinosaurs, Driving Test, Early Essentials (-6), English (6-16), French (6-16), Junior Essentials (5-11), Maths Algebra (6-16), Maths Number (6-16), Maths Statistics (6-16), Spelling each		£18
– German, Italian, Science, Spanish each		£POA
Access for A3000	Acorn	£138
Access for A3020/A4000	Acorn	£138
Access for A5000	Acorn	£143
Access for Risc PC 600	Acorn	£118
Acorn Advance	Acorn	£88
– Primary Licence		£183
– Secondary Licence		£442
Advantage, KS2,3	Longman	£46
Almanac 3	Stallion	£64
Amazing Maths, KS1-4	Cambridgeshire	£19
Animated Numbers, age 3-6	Sherston	£19
Apollonius PDT	Oak	£149
ArcFax	David Pilling	£28
ArcFS 2	Vertical Twist	£20
Archimedes Assembly Language	Dabs	vo £15
– with disc		£22
CardShop	Clares	£19
Carnage Inc.	Fourth Dim	£18
Castle of Dreams, age 7-11	Storm	£20
Cataclysm	Fourth Dim	£14
Chameleon	4mation	£33
Champions Compilation	Krisalis	£13
Chaos Engine	Renegade	£19
Chocks Away Compendium	Fourth Dim	£25
Chopper Force	Fourth Dim	£13
Chuck Rock	Krisalis	£17
Clip Art CD	CC	£18
Conjuguez	Creative	£25
Crystal Maze, age 7-70	Sherston	£28
Crystal Rain Forest, age 8-11	Sherston	£33
Cyber Chess	Fourth Dim	£24
Cycloids	GamesWare	£16
Darryl the Dragon, KS1,2	4mation	£18
– site licence		£36
Darryl the Dragon Activity Sheets	4mation	£10
DataPower	Iota	£123
Demon's Lair	Fourth Dim	£13
DeskEdit2	RISC	£25
Desktop Assembler	Acorn	£118
Desktop C	Acorn	£178
Desktop Thesaurus	RISC	£17
Desktop Tracker	Vertical Twist	£50
Digital Symphony	Oregan	£41
Dinosaur Discovery, KS2	4mation	£25
– site licence		£54
Disc Commander	Digital Phenomena	£29
Disc Rescue	Look	£28
DrawBender	ICS	£10
– site licence		£30
Dungeon	Fourth Dim	£24
Easy C	RISC	£45
Easy Font	Fabis	£24
Ego: Repton 4	Superior	£18
Elite	Hybrid	£32
Enter the Realm	Fourth Dim	£13
E-Type Compendium	Fourth Dim	£13
Eureka 2	Longman	£93
– site licence		£48
Granny's Garden CD	4mation	£28
Granny's Garden Resource Pack	4mation	£15
Graphics on the ARM Machines	Dabs	vo £15
Graph_IT	Sherston	£19
GridPro	4mation	£35
– site licence		£70
Grievous Bodily 'ARM	Fourth Dim	£15
Hard Disc Companion II	RISC	£40
Haunted House	Fourth Dim	£18
Hearsay II	RISC	£69
Heimdall, limited offer	Krisalis	£13
HeroQuest	Krisalis	£13
Holed Out Compendium	Fourth Dim	£13
Home Accounts	Minerva	£28
Illusionist	Clares	£41
ImageMaster	David Pilling	£24
Impression	Dabs	vo £14
– with disc		£17
Impression Borders Pack 1	Fabis	£10
Impression Borders Pack 2	Fabis	£10
Impression Publisher	CC	£135
– OPI Supplement		£225
Impression Style	CC	£76
– site licence		£435
Interdictor 2	Clares	£25
Investigator III	Vertical Twist	£42
Ixion	GamesWare	£16
Jahangir Khan Squash	Krisalis	£9
James Pond	Krisalis	£18
James Pond 2 +	GamesWare	£19
Junior PinPoint, KS1,2	Longman	£25
– primary site licence		£83
Junior PinPoint Datafile, KS2,3 – Animal Kingdom, Dinosaurs, Festivals, Food Glorious Food, Junior Olympics, The Victorians each	Longman	£13
Keylink Prolog	Keylink	£69
Keystroke	Quantum	£24
Kid Pix, KS1,2	ESM	£34
Knowledge Organiser 2	Clares	£63
Krisalis Collection	Krisalis	£20
Landmarks. KS2,3 – Aztecs, Civil War, Columbus, Egypt, Elizabeth I, Rain Forest, Second World War, Victorians each	Longman	£21
Landmarks – Microworld Invasion	Longman	£22
Landscapes	Longman	£46
Last Ninja	Superior	£13
Notate, KS2-4+	Longman	£50
Oh No! More Lemmings (requires Lemmings)	Krisalis	£15
Omar Sharif's Bridge	Krisalis	£19
Orrery	Spacetech	£93

NO CHARGE FOR CREDIT CARDS

Title	Publisher	Price
Ovation	RISC	£79
Oxford Reading Tree Stage 2 Story Books, age 5-7	Sherston	vo £9
Oxford Reading Tree Stage 2 Talking Stories, age 5-7	Sherston	£37
Padlock	ICS	£10
– site licence		£30
Pandora's Box	Fourth Dim	£13
PenDown, KS1-3	Longman	£45
PenDown Etoiles, KS3,4	Longman	£49
PenDown Outline Fonts	Longman	£17
PenDown Plus, KS2-4	Longman	£67
Personal Accounts V3	Apricote	£38
Perspectives	TechSoft	£54
Photobase – Landscapes	Longman	£47
Photodesk	Spacetech	£157
Photo Touch	Oregan	£68
PIMS	Longman	£339
PinPoint 2, KS3,4	Longman	£79
– site licence		£340
PinPoint 2 Datafile, KS3,4 – 1851 Census, Britain since the 1930s, Diet and Nutrition, Far Away Places, Kartei - The German Questionnaire, Second World War, Solar System – each	Longman	£13
Placard	ICS	£10
– site licence		£30
Play It Again Sam 1	Superior	£19
Play It Again Sam 2	Superior	£19
Play It Again Sam 3	Superior	£19
Plot	Clares	£63
Populous	Krisalis	£13
Powermonger	Krisalis	£22
Premier Manager	Gremlin	£21
PrimeArt, KS1-4	Minerva	£58
PrimeMover, KS2-4	Minerva	£69
PrimeSolver, KS1-4	Minerva	£74
PrimeWord, KS2-4	Minerva	£51
Printer Drivers, RISC OS: Canon BubbleJet, Canon LBP, Canon PJ1080, ColourCel, Epson JX, Epson ESC-P2, HP, Integrex 132 – each	Oak	£15

We'll be changing the style of our ads over the next couple of months.

You'll notice that the length of this list has already been reduced. The number of Acorn products keeps growing, and until now we were listing a substantial proportion of them. It's become an impractical goal for a magazine advert. One problem is that we have to set prices a month before you see them, by which time quite a few will be out of date.

BUT ...

We can supply you with almost any Acorn product, whether it is listed here or not.

Just call 051-625 1006 for an immediate price on most items. (Our phone does tend to be busy, so sending an SAE for a full up-to-date price list may be a quicker option).

Title	Publisher	Price
Archimedes Game Maker's Manual	Sigma	vo £15
Archivist Pro	Oregan	£36
Arcterm 7	Serial Port	£58
Arcventure – I ... The Romans, age 10-12; II ... The Egyptians, age 8-9; III ... The Vikings, age 7-11 – each	Sherston	£25
Armlock	Digital Services	£33
	Sherston	£37
ArtWorks	CC	£112
– network licence		£650
– site licence		£545
ArtWorks CD	CC	£153
ArtWorks Made Easy	Dabs	vo £15
AudioWorks	CC	£45
	Acorn	£366
Aztecs, age 7-11	Sherston	£37
Badger Trails, age 9-11	Sherston	£35
Battlechess	Krisalis	£13
BBC Basic Reference Manual	Acorn	vo £22
Beginner's Guide to Wimp Programming on the Archimedes	Sigma	vo £13
Birds of War	Fourth Dim	£24
Bitfolio Cartoon Graphics	Look	£17

POSTAGE IS FREE
FOR PREPAID SALES IN THE UK

Title	Publisher	Price
Black Angel	Fourth Dim	£24
Bodywise, age 9-14	Sherston	£37
Bookstore	ESM	
– Primary, KS1,2	ESM	£35
– Secondary, KS3,4	ESM	£53
Break 147 & Superpool	Fourth Dim	£24
C (new edition)	Dabs	vo £16
– with disc		£24
Cambridge Pascal	Oak	£65
Exotic Adventures of Sylvia Layne	Fourth Dim	£13
Fervour	Clares	£16
Find It!	Appian	£34
Fireworkz	Colton	£89
First Logo, KS1,2	Longman	£21
First Page, KS2-4	Longman	£42
First Steps in Programming Acorn RISC OS Computers	Sigma	vo £15
Flossy the Frog, KS1	4mation	£23
– site licence		£48
Flossy the Frog Art Disc	4mation	£10
Fontasy	ICS	£15
– site licence		£45
Fontasy / DrawBender / Placard	ICS	£30
– site licence		£80
Font Directory	Look	£28
FontFX	Data Store	£9
– site licence		£70
Fonts Pack 1	Fabis	£15
Fonts Pack 2	Fabis	£15
Food for Thought, age 7-16	Sherston	£15
F.R.E.D.	GamesWare	£15
Freddy Teddy	Topologika	£15
– Balloons & The Zoo	Topologika	£20
– The Playground	Topologika	£25
– The Puddle & The Wardrobe	Topologika	£20
Freddy Teddy's Adventure	Topologika	£15
Fun School 4	Europress	
– age -5, age 5-7, age 7-11 each		£17
Galactic Dan	Fourth Dim	£15
Games Wizard - The Apprentice	GamesWare	£17
Genesis Professional	Oak	£112
Genesis Project	Oak	£47
Genesis SDK	Oak	£750
Gods	Krisalis	£17
Granny's Garden	4mation	£23
Lemmings	Krisalis	£17
Lemmings II (Tribes)	Krisalis	£20
Little Red Riding Hood, age 5-8	Selective	£19
Logo, KS1-4	Longman	£55
Lotus Turbo Challenge 2	Krisalis	£18
Magic Pockets	Renegade	£18
Magnetoids	Oregan	£23
Magpie	Longman	£50
Manchester United	Krisalis	£9
Manchester United Europe	Krisalis	£13
Master Break	Superior	£13
Masterfile III	RISC	£45
Maths Circus	4mation	£25
– site licence		£53
Micro Music	Fisher-Marriott	£19
Monotype Fonts (Pack 1), offer	Look	£59
Morpheus	Oregan	£29
MultiFS	Arxe	£29
Music Box	Topologika	£32
Naughty Stories (5-7) (set of 6)	Sherston	
– Volume 1		£39
– Volume 1 primary site licence		£99
– Volume 2		£39
– Volume 2 primary site licence		£99
Nebulus	Krisalis	£17
NightSky	Clares	£63
Noddy's Big Adventure	Jumping Bean	£19
Noddy's Playtime	Jumping Bean	£18
Noot	4mation	£41
– site licence		£88
Noot Art Disc	4mation	£10
Deskjet 500C, Epson / Star colour – each	RISC	£15
ProDrivers: Canon LBP8, Epson ESC-P2, HP Colourjet – each	Oak	£33
TurboDrivers: Canon, Epson Stylus 800, HP – each	CC	£42
ProArtisan 2	Clares	£102
ProArtisan 24	Clares	£POA
ProArtisan 2CD	Clares	£129
ProCAD, KS4	Minerva	£450
Programming in ANSI Standard C on the Archimedes	Sigma	vo £15
Prophet (requires 2 Mb)	Apricote	£145
Prophet Entry Level	Apricote	£8
Quest for Gold	Krisalis	£13
QuickKey	ICS	£10
– site licence		£30
Raw Power II	GamesWare	£16
Real McCoy 4	Fourth Dim	£22
Recall, age 8-13	Sherston	£37
Recordz	Colton	£97
RemoteFS Parallel Port	Atomwide	£49
RemoteFS Serial Port	Atomwide	£49
Render Bender 2	Clares	£40
Rephorm	Oak	£47
Repro	Oak	£46
Repton 3	Superior	£19
Resultz	Colton	£75
– secondary site licence		£312
Revelation	Krisalis	£9
Revelation 2, KS2-4	Longman	£65

All ICS business is done on Acorn computers using RISC OS software

Revelation 2 CD Rom	Longman	£90
Revelation ImagePro	Longman	£125
Rhapsody 3	Clares	£75
Rhythm-Bed	Clares	£38
RISC OS 3 Applications Upgrade	Acorn	£10
RISC OS 3 First Steps	Dabs	vo £15
RISC OS 3 Programmer's Reference Manual	Acorn	vo £99

– Britain Since the 1930s, KS2	£28
– Create Your Own Timelines, KS2,3	£37
– Expansion, Trade and Industry, KS3	£37
– Making of the United Kingdom,KS3	£37
– Medieval Realms, KS3	£37
– Tudor and Stuart Times, KS2	£33
– The Victorians, KS2	£30

PLEASE TELL TIM . . .

Tim NiceButDim doesn't understand how we can possibly sell all these goodies for less than the maker's price. Sometimes he doesn't even check our price, but just assumes it will be cheaper to buy from the maker. It's a shame really.

We'd like to explain to Tim that there's really no mystery. We buy large quantities, and so we get a discount. We pass some of it on to our customers. And the goods we sell are exactly as they would arrive from the makers.

ICS PRICES ARE JOLLY GOOD.

RISC OS 3 User Guide	Acorn	vo £22
RISC OS 3 User Guide for Risc PC 600	Acorn	vo £22
RISC OS Style Guide	Acorn	vo £13
Risc PC 600 Technical Reference Manual	Acorn	vo £POA
Risc PC 600 Welcome Guide	Acorn	vo £8
Saloon Cars Deluxe	Fourth Dim	£24
– Deluxe Extra Courses		£15
S-Base 2 Developer	Longman	£189
S-Base 2 Developer Plus	Longman	£345
S-Base 2 Personal	Longman	£109
Schedule	Acorn	£18
Schema 2	Clares	£95
Score Draw	Clares	£45
Sea Rescue, age 7-9	Sherston	£24
Sensible Soccer	Renegade	£19
Serenade	Clares	£79
Shylock Gnomes, age 10-15	Selective	£16
Sibelius 6	Sibelius	£149
Sibelius 7	Sibelius	£789
– education and amateur price		£464
Sim City	Krisalis	£22
Simon the Sorcerer	GamesWare	£29
Sleuth	RISC	£41
Small	Virgo	£19
smArt	4mation	£46
smArt Aliens, Animals, Dinosaurs, Egypt, Europe†, Faces*, Fantasy, Fashion, Fiddles & Drums, Heraldry, Homes*, Leisure*, Look Smart, Smartoons, Trees and Gardens *English/French/German/Spanish/Welsh; †English/French/German; please specify each	4mation	£15
smArtFiler	4mation	£32
smArt Modern Languages	4mation	£19
SolidCAD	Silicon	£77
Somerset Talking Computer Project Learning Materials	Longman	vo £29
SparkFS	David Pilling	£20
Sparkle	Morley	£59
Special	ICS	£10
– site licence		£30
Speedball II	Krisalis	£17
Splash, age 7-11	Sherston	£17
Split an Image, age 7-16	Sherston	£16
Spooler (Clares)	Clares	£12
Spooler (Comp Tut)	Computer Tutorial	£9
Squirrel 2	Digital Services	£127
– site licence		£545
Squirrel C Developer's Toolkit	Digital Services	£97
Starspell Plus	Fisher-Marriott	£19
Striker	GamesWare	£21
StrongED 3	Stallion	£22
Stunt Racer 2000	Fourth	£24
Stunt Racer 2000 Extra Tracks	Fourth	£16
Swiv	Krisalis	£9
Talking PenDown, KS1-3	Longman	£53
Talking Pictures	Wyddfa	£18
Talking Pictures Welsh (Lluniau Llafar)	Wyddfa	£18
Talking Stories – Gwen at the Fair, Gwen goes to School, Gwen's Nose, Gwen's Tummy each	Wyddfa	£17
Target Maths, age 6-13	Triple R	£16
Technodream (Nevryon 2)	Superior	£19
Time Detectives ... The Victorians, age 7-11	Sherston	£37
Time Traveller, KS2	ESM	£39
Titler	Clares	£79
Topographer	Clares	£61
Touch Type	Iota	£38
– site licence for 10		£137
Trace	David Pilling	£9
Twain Canon IX incl Scan-Light Professional	David Pilling	£16
Twain Epson GT8000, 6500	David Pilling	£16
Twain HP Scanjet II, IIc, IIcx	David Pilling	£16
TWO (Task and Window Organiser)	ICS	£10
– site licence		£30
TypeStudio	RISC	£38
Vector	4mation	£75
Victorians, age 7-11	Sherston	£POA
Viewpoints, age 7-11	Sherston	£36
Virtual Golf	Fourth Dim	£23
Visual Backup	Dabhand	£39
Vox Box	Clares	£40
Waiter	Digital Services	£35
WimpGEN	Silicon	£79
WordWorks	CC	£36
Wordz	Colton	£55
WorraCAD	Oak	£65
Xenon 2	GamesWare	£19
Zelanites (not OS 3)	Micro Power	£15
Zool	Gremlin	£18

HARDWARE

COMPUTERS . . .

Risc PC 600 with 1 year's on-site support		
– 2M HD210 14" Monitor	Acorn	£1245
– 2M HD210 17" Monitor	Acorn	£1645
– 5M HD210 14" Monitor	Acorn	£1395
– 5M HD210 17" Monitor	Acorn	£1795
– 9M HD420 14" Monitor	Acorn	£1695
– 9M HD420 17" Monitor	Acorn	£2095

CALL FOR LATEST RISC PC OFFERS

MEMORY . . .

Fitting extra unless otherwise stated
† Fitting fairly easy ‡ Fitting needs expertise

A3000 1-2 Mb †	IFEL	£58
A3000 1-4 Mb †	IFEL	£105
A3010 1-2 Mb		£35
A3020 / A4000 2-4 Mb †	IFEL	£74
A305/310/440 1-2 Mb soldered ‡	IFEL	£83
A305/310/440 1-4 Mb soldered + MEMC1a‡	IFEL	£158
– as above + fitting		£188
A5000 2-4 Mb †	IFEL	£70
A5000 2-8 Mb including fitting	Atomwide	£500
A5000 4-8 Mb including fitting	Atomwide	£391
A540 4 Mb †	Acorn	£238
Risc PC 1 Mb VRAM	Acorn	£127
Risc PC 2 Mb VRAM	Acorn	£195
Risc PC 2 Mb VRAM	HCCS	£148
SIMM 2 Mb 32 bit		£POA
SIMM 4 Mb 32 bit		£POA
SIMM 8 Mb 32 bit		£POA
SIMM 16 Mb 32 bit		£POA

SCANNERS, DIGITISERS . . .

Eagle M2	Wild Vision	£319
GreyHawk	Wild Vision	£98
Hawk V9 MkII	Wild Vision	£195
– A3000 Series		£195
Scan-Light A4	CC	£277
Scan-Light 256	CC	£185
– A3000 External	CC	£190
– A3000 internal	CC	£190
Scan-Light Professional	CC	£550
– as above + SCSI interface	CC	£699
Scan-Light Video	CC	£208
Scan-Light A3000/A4000	CC	£208
Vision 24	HCCS	
– A3000/3010/3020/4000 internal		£96
– A3000 external		£109
– A5000/400/300/RPC600		£96
Vision 24 508 line	HCCS	
– A3000/3010/3020/4000 internal		£134
– A3000 External		£109
– A5000/400300/RPC600		£134

PRINTERS . . .

A4-1200/1 Direct Drive Laser Printer	Calligraph	£989
Bubble Jet BJ-10sx	Canon	£175
Bubble Jet BJ-10sx + TurboDriver	Canon/CC	£219
Bubble Jet BJ-230	Canon	£315
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486 PC Card 50 MHz Bare	Aleph One	£434
A300/400 Fan kit	ICS	£15
A305/310/440 RISC OS 3 Carrier Board ‡	IFEL	£19
A5000 Fitting Kit for second hard disc	ICS	£15
Backplane, 4-slot 4-layer with fan	IFEL	£55
Case Upgrade only for Risc PC 600 2M and 5M	Acorn	£98
ColourBurst	State	£374
ColourCard Gold	Wild Vision	£225
– A3000 External	Wild Vision	£225
Dongle Dangle with screw fittings	ICS	£6
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EPS Toner Cartridge for LBP-8		£75
Ethernet Network Interface Card for Risc PC 600	Acorn	£98
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ideA Removable Hard Disc Fitting Kit for A5000	ICS	£25
Micro Mouse	Clares	£25
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Mono/SCSI	Atomwide	£48
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SVGA Multiscan PS Monitor 17"	Acorn	£990
SVGA Multiscan Monitor 14"	Acorn	£315
– bought with computer		£250
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Ultimate CD ROM Dual Speed, MultiPodule (needs PSU upgrade)	HCCS	£223
Whisper Fan Quietener (for A300/A400 series only)	ICS	£15
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Riding the information superhighway

IN A BOLD move to radically broaden Acorn's business base, the company is to make a serious bid to become a leading player in the digital set-top box multimedia business for conveying interactive multimedia services like video on demand.

It's all part of the hot topic of the information superhighway, or Infobahn if you prefer the European, which analysts are forecasting will become a $38 billion market within ten years.

A new division within Acorn has been set up to develop, produce and licence to third parties, the technology required. That technology is largely based on technology used in mainstream Acorn products like the Risc PC, for example.

Digital set-top boxes will enable users in homes and offices to access huge repositories of multimedia computer data contained in centralised servers all over the world.

This data will contain TV programmes, movies and audio tracks which can be played back instantly at the user's wish.

Programmes being played will be conveyed from central servers over high speed digital communications links to local distribution exchanges and from there either transmitted over conventional co-axial cable, as used in cable TV, to your home/office or even over ordinary copper phone lines.

Later, it's predicted most users will opt for direct optical fibre connections. Multimedia data transmission to the set-top box will be tightly compressed using MPEG (Motion Picture Experts Group) encoding, which is already used in Video CD, for example. Interactivity is the magic attraction feature of the services digital set-top boxes will convey.

Although the movie you might be watching will be contained on a large hard disc drive (typically 2Gb per movie) at the remote server centre you will be able to instantly stop the action, select slow motion, freeze-frame and jump to a different segment of the film.



Ernesto Musumeci – Acorn's chairman and director of Olivetti, Acorn's major shareholder

What makes this even more remarkable is that the same movie, contained on the same hard drive server, can also be viewed by a large number of other people with the same interactive facilities, though the idea is that you'd never notice this.

Interaction conjures up all sorts of possible applications like video tele-shopping, interactive games, video phone and conferencing facilities and much more.

Acorn is confident that it has a lead over most of its rivals, notably Apple, because its Arm processor-based technology, as used in the Archimedes and Risc PC, is a lot more powerful and costs significantly less – especially in the huge production volumes anticipated.

Set top boxes are nothing new – they are already used for conventional analogue cable TV and satellite TV decoding – but Acorn says the established manufacturers of these devices do not have the digital technology Acorn possesses to produce next-generation digital multimedia boxes. Acorn has already demon-strated a prototype running on a live 2 megabits/second data link, emulating the connection conditions of expected video on demand services.

Field trials with one or more of the emerging major interactive multimedia service providers, possibly involving hundreds or even a few thousand Acorn set-top box units, are expected to commence by the end of the year, according to Acorn's technical director, Malcolm Bird. Upgrade kits for conventional Acorn Risc OS computers to access the same interactive multimedia services as the dedicated set-top box are entirely feasible and could be introduced if the market was right.

Acorn's major shareholder, Olivetti, is visibly backing this particular initiative for a change and it's interesting to see a number of Olivetti family companies with direct and indirect Acorn links, based in Cambridge, contributing to the project. Arm Ltd designs the processors, video and support chips, Olivetti Research Laboratories (ORL) has provided ATM (asynchronous transfer mode) code for handling the data stream connection and ATM Ltd, an ORL spin-off, is providing ATM network services to test and demonstrate the hardware.

It's no surprise that all these companies have staff who have worked at Acorn at some stage in their careers.

Just over three years since it was formed, Arm Ltd is proving to be more profitable than Acorn, its parent company. In a similar time frame, we could be reporting a similar story about Acorn's interactive multimedia division.

If Acorn gets the breaks, millions of its set-top boxes could be in use by the end of the decade.

The set-top box market is expected to be worth over $9 billion in ten years' time, by which time the Acorn Computer Group could find itself being a billion dollar company.

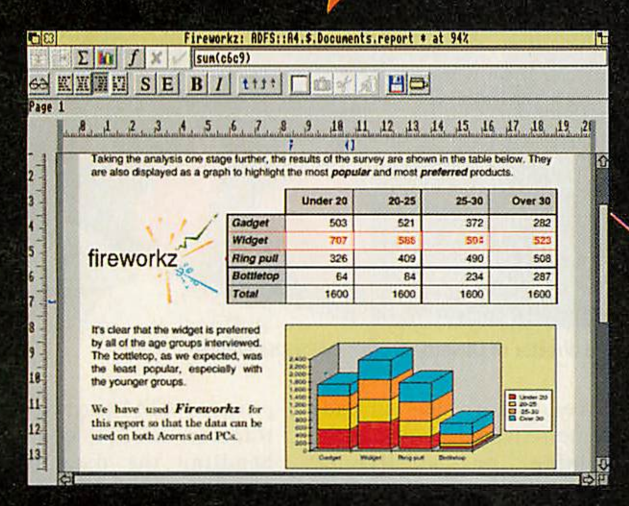
There have been enthusiastic predictions of world domination for Acorn in the past, but all of a sudden, this time the prospects don't seem quite so fanciful...

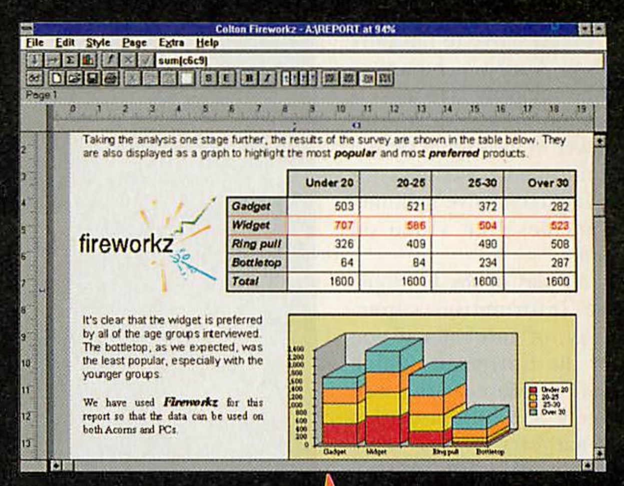
£149 worth of Fireworkz for £99

Until September we're doing a very special offer for Fireworkz. Over the summer period we've reduced the price from £149 to £99. You can buy a secondary site licence for £396 instead of £596.

Fireworkz

Our superb integrated program which incorporates the Wordz wordprocessor and Resultz spreadsheet really is easy to use. The wordprocessor and spreadsheet share the same controls so that once you've learned one you know the other. The table editor in the wordprocessor is second to none and you can include spreadsheet calculations inside the table. To make a live graph you just swipe the figures in the table with the mouse and press the graph button. We've never seen editing formulas any simpler either: adding up numbers is just a point and click operation.





Fireworkz for Windows is now available

We've spent the last few months on the next stage in the Fireworkz project: the Windows version. This is now available, also at the special price of £99. If you already have the RISC OS version, you can add the Windows version for £50. If you have both Acorns and PCs you can now work on your files on either machine. You can even use the same floppy disc. Fireworkz for Windows can load Lotus, Excel and RTF files. Fireworkz is the only choice, if you plan to buy PCs in the future.

Recordz & Fireworkz Pro

Fireworkz Pro is coming later this year. This incorporates Recordz, the next major piece in the jigsaw: it's a fast and friendly database with card layout, searching and sorting. It uses DataPower format files amongst others, shares Fireworkz' wonderful user interface and can exchange data with the spreadsheet.

fireworkz ® © ™ 1993...4...

ClassCardz

In conjunction with Bretton Woods School, we've been developing teaching cards for Wordz and Resultz. These are now available for £20. You get a set of A4 laminated cards which you can photocopy. These take you through the first steps with Wordz and Resultz: creating and editing documents in a wordprocessor and spreadsheet.

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Financial stakes

BOTH disappointing and encouraging news can be found in Acorn's latest set of financial results for the year ending December 1993.

Despite few major changes to the product range to stimulate the market in 1993, Acorn managed to increase its turnover by 13 percent to £54.3 million, compared with £48.2 million in 1992.

However, selling more computers doesn't necessarily mean making more money and according to Gary Johnson, Acorn's financial director, gross margins fell by five percent in 1993.

This, plus the news that Acorn has invested £0.7 million in setting up its new German operation, means operating profit has fallen from £1.6 million to a nominal £104,000 before and after tax.

In fact it was Acorn's spin off partner company, Arm Ltd, which kept Acorn out of the red with a contribution of £183,000.

This was Acorn's share of the Arm Ltd's £0.4 million profit for 1993. Acorn has a 43% holding in Arm Ltd.

'The fall in gross margins arose both from competitive price pressures and from increases in the cost of key components, particularly semiconductors,' explained Johnson, who added that cost rises had since stabilised.

Nevertheless, Johnson suggests that a significant recovery in margins is unlikely in the short term.

Meanwhile, Acorn is continuing an internal adjustment of its business practices to reduce overheads.

Acorn's managing director, Sam Wauchope, summarised the situation: 'Despite the financial pressures, 1993 saw important achievements. We retained our leadership of the UK schools market, with independent market research confirming that Acorn continues to provide half of the computers installed in British schools.'

Wauchope says the continuing strength of Acorn's market in the education sector is down to straightforward assets like unrivalled understanding and commitment towards customer needs, plus a commitment towards research and development.

If ever you needed a product to reflect the claims Wauchope makes, it has to be the Risc PC launched in April.

However, as Gary Johnson points out: 'This focus on growth and exploiting investment and skills does not detract from the need to provide a solid base to work from.

'There is a need to improve margins and our growth must be achieved without an equivalent increase in the overhead cost base. This is very much a focus of attention in 1994.'

Surely, the future looks positive for Acorn. The Risc PC has renewed Acorn's product range at the high end and heralded an attack on the high school sector, and the new machine's popularity has soared far ahead of Acorn's sales expectations.

So far, at least three important Acorn customers in the education market have apparently aborted plans to equip with PCs on the strength of the Risc PC.

However, there are worries that Risc OS software applications development is not as active as it needs to be to support the hardware platform.

Nevertheless, Arm Ltd growth and profitability continues to surge ahead of the company's original business plan as more highly respected semiconductor names queue up to license Arm technology.

Then there is Acorn's long overdue move into the wider commercial multimedia market to diversify the company from its core education markets: see the news of Acorn's foray into multimedia set-top boxes on page 9

On the down side, the A4 portable and the other lower-cost Archimedes models in the Acorn line need updating as soon as possible.

Minerva mapper

MINERVA SOFTWARE is continuing its drive into products using Ordnance Survey (OS) map data by producing a package which will enable schools and colleges to import map data into applications running on Risc OS computers.

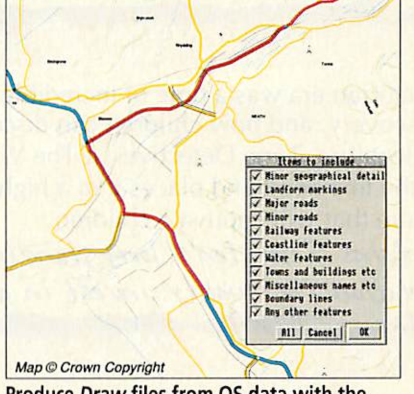
Minerva's new, as-yet unnamed, package will convert OS digital map data into *Draw* format, making it useful for the vast majority of *Draw*-enabled Risc OS applications.

The software also enables users to view maps on-screen, understands OS map references, enables selective data import/export and allows additional objects to be added to maps.

The software will only be available to educational establishments, where it will be priced at £29 + VAT, with primary licences costing £45 and secondary at £145.

Minerva is obliged to stress that a copyright licence is required for schools not covered by a Local authority Service Level Agreement.

Ordnance Survey Digital Map Data can be obtained under licence from their Digital Sales Department, tel: (0703) 792773. Minerva is on (0392) 437756 or fax (0392) 421762.



Produce *Draw* files from OS data with the new package from Minerva

Z-Link II update

In double-quick time and in response to last month's critical but constructive review in *Acorn User*, the Really Good Software company has produced a revised version of its *Z-link II* utility for linking Cambridge Z88 portable computers to Risc OS computers.

It's now Risc PC-compatible and has a number of other minor changes. Free upgrades are available to existing users. The Really Good Software company is on (0582) 761395.

Queen's award for Psion

Psion has won a Queen's award for innovation for its Series 3 computer, a triumph Acorn (a Queen's award winner in previous years) will also be celebrating on the sidelines as a partner company of Psion's which recognised the potential of the Series 3, in Pocket Book guise, in education.

Colton price drop

Colton Software has slashed its prices for the summer and introduced training resource materials for its *Wordz* word processor, called Classcardz.

The combined spreadsheet and word processor, *Fireworkz*, is reduced from £149 + VAT to £99 and a secondary site licence falls from £596 to £396.

Classcardz, priced £20, is a set of laminated training cards for training users new to *Wordz*. Colton Software is on (0223) 312010.

Video graphics

Millipede Electronic Graphics has produced a professional video graphics board, called the APEX Imager Expansion Board, for the Risc PC.

APEX boards are designed for real time smooth video image manipulation and effects animation. Features include anti-aliasing and alpha-channel pixel by pixel processing.

Millipede's APEX board is priced £3000 + VAT and is aimed at the professional video effects market. Millipede is on (0284) 850594.

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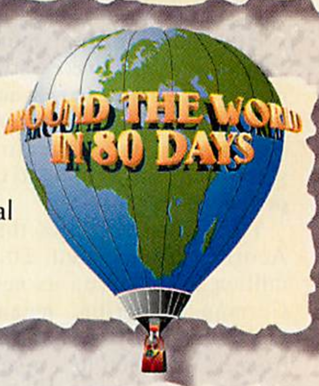
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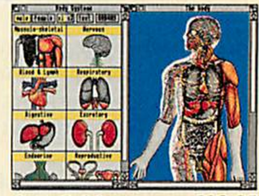
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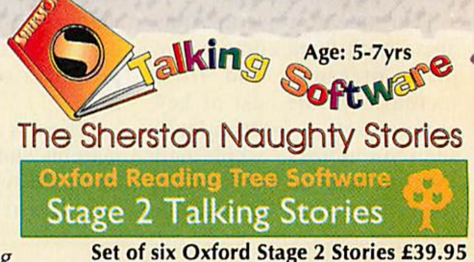
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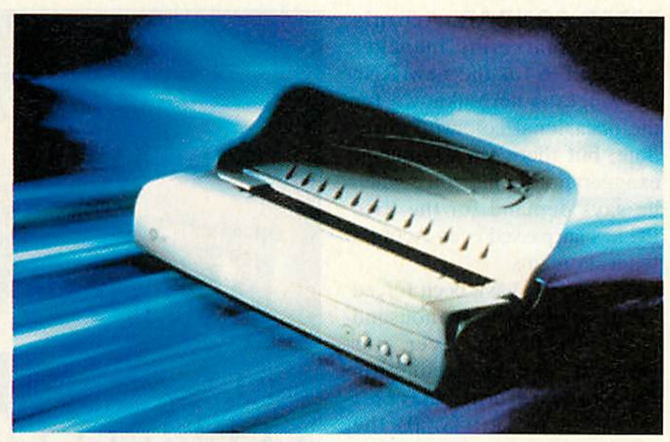


New Olivetti ink-jet printers

OLIVETTI has released a new bubble ink-jet printer which can be fitted with either a monochrome or colour ink cartridge. The JP360 is designed to operate at up to three pages per minute and has an integral sheet feeder.

JP360 ink cartridges are designed to be refillable, which Olivetti says will save users up to 40% on new cartridge costs.

The JP360 is expected to sell for less than £300. Olivetti UK can be contacted on 081-785 6666



The new JP360 printer from Olivetti

The next Acorn portable?

ACORN is not denying the replacement for the A4 portable will again be clothed in an Olivetti notebook PC design.

Olivetti has just launched its impressive-looking Echos notebook PC range, which has an eye-catching reddish brown finish compared to the usual grey or black.

The design also has an ergonomically sound set-back keyboard with integral palm rests, rather like the trend-setting Apple PowerBook.

Acorn User got it right when we predicted the look of the A4, but it will probably be a whole year before we find out if Acorn's new portable echoes the Echos.

Another possible candidate for Acorn is a new ultra-compact and lightweight Olivetti sub-notebook design to replace the old Quaderno range in the Autumn.



One of Olivetti's new notebooks

Multimedia winner for ILP

FOLLOWING last year's winner with its British Birds CD-Rom, Interactive Learning Productions (ILP) has scored another Gold Award for Acorn-based multimedia at the British Interactive Multimedia Awards (BIMA), with the Risc OS version of *¡En Marcha!* a Spanish language learning disc designed and developed for Yorkshire Television. Potential candidates for next year's BIMA awards have just been launched by ILP in the form of *World War II: Global Conflict* and *WWII: Sources and Analysis* CD-Roms, featuring interactive video and archive footage of the war years.

For more information, contact ILP on 091-261 1255 or fax 091-230 0944.



¡En Marcha! the award-winning Spanish CD-Rom from ILP

Hardware conformance

A TECHNICAL quality initiative for vetting hardware produced by independent developers has been introduced by Acorn.

The Acorn Hardware Conformance Scheme is designed to offer customers greater peace of mind when buying hardware upgrades for their Acorn computers.

The scheme has been formed with close consultation between Acorn and its third-party developers. Wild Vision's Peter Wild commented: 'With this new scheme, the customer will be able to consider not just price but technical quality as well.'

A special hardware conformance logo has been designed, which can be displayed on registered products.

CC A4 colour scanner

COMPUTER Concepts is to introduce a 24-bit colour version of its Scanlight Professional A4 scanner package, based around the compact Canon IX-4015 scanner.

CC has updated the Scanlight software to work with 24-bit colour data and a top third-party colour graphic image manipulation package will be bundled with the scanner, though at press time CC had not yet decided which package to use.

For more information contact CC on (0442) 63933 or e-mail info@cconcepts.co.uk.

Logotron

THREE NEW educational software packages have been released by Longman Logotron; *First Page* is a companion package to Longman Logotron's popular *PenDown* word processor.

Embedded object support means that if you want to edit either a *Draw* or sprite image all you need to do is click the mouse on the image and the originating application is summoned with that image loaded, ready for any changes to be made. *First Page* is priced at £49 + VAT in single-user form or £140 + VAT for a primary school licence and £190 + VAT for a secondary school licence.

The new *Landmarks* titles are aids for history teaching. *Microworld Invasion* is a simulation of the build up to the Allied invasion in the spring of 1944. For example, you can lift the roof off a house to find out how people lived in those days. The price is £24.95 + VAT or £75 + VAT for a site licence. *PinPoint Datafile – Britain since the 1930s*, is a resource data file for use with Longman's *PinPoint*.

Data includes facts and figures from census information to hobbies, inventions, etc. over the years from 1930 to 1990. The price is £12 + VAT or £36 + VAT for site licence. Longman Logotron can be contacted on (0223) 425558 or Fax (0223) 425349.



More graphics tablets

Eesox, in conjunction with Vaughan Allanson, has released two further graphics tablets adapted specifically for Acorn computers.

The firm's existing A4 and A5 Wacom graphic tablets are now joined by A3 (£799 + VAT) and A2 (£1599) size boards and as before include pressure sensitive styli. Spacetech's *PhotoDesk* and Digital Arts' *DA's Picture* already support Eesox Wacom tablet features. For more information contact Vaughan Allanson on phone/fax (0638) 578597

CC takeover Wild Vision

Computer Concepts has taken over the entire marketing and distribution of Wild Vision products, like the Eagle and Lark A/V boards, leaving Wild Vision, a Newcastle-based Computer Concepts subsidiary, free to concentrate on research and development.

All Wild Vision product enquiries should now be addressed to Computer Concepts in Hemel Hempstead. Telephone (0442) 63933.

NCET awards

Six out of 18 finalists have used Acorn kit to produce their entries in the National Council for Educational Technology (NCET) National Educational Multimedia Awards.

A majority of all the entries were produced using Acorn computers too. The awards ceremony takes place on 6 July at the National Museum of Photography, Film and Television in Bradford.

Vision Logix

A suite of four logic design and simulation appli-cations called Logix has been produced by Silicon Vision.

A library of basic logic gates as well as ready-built complex circuits is supplied and you can add your own circuit designs too. Circuits and simulations can be saved out as *Draw* files. Contact Silicon Vision on 081-422 3556 or fax 081-248 3589.

Risc PC mania

PETER BONDAR, Acorn's product marketing manager responsible for the new Risc PC range, is not unknown for the occasional colourful anecdote, but there isn't a hint of exaggeration in his voice when he says demand for the Risc PC has surpassed even Acorn's wildest dreams.

'So far, we have been forced to make about four thousand extra Risc PCs over our original planned production run and we still haven't managed to satisfy all the outstanding demand.

'It's great news for us of course, but obviously not everyone is happy as they have to wait for their machine, but we're doing the best we can.'

Despite some rumours that the Open Bus slot-in 486 PC option for the Risc PC was going to appear rather later than hoped, Bondar remains adamant that the project is on target. But the priority is to get a cheap, basic performance 486 card up and running with software compatibility as the highest priority.

'As I see it, there are three possible scenarios; either the chip works 100 percent first time around, it has some bugs but works acceptably for the entry-level 486 we are looking for, or it doesn't work at all.'

A modified Sheena ship capable of supporting faster 486 processors like Intel's new 100MHz DX4 and interrupt-intensive applications like networking, would be produced later if the initial version was only suitable for Acorn's basic specifications.



It's arrived, albeit in smaller numbers than we hoped

The final scenario could delay the project for six to eight weeks while a 'second turn' redesign and re-fabrication takes place, but even then Bondar thinks his target of showing working samples in October is fully attainable.

Meanwhile, the search for a successor to the present Risc PC's standard 0.8 micron 30MHz Arm610 processor is on. 'We have an embarrassment of riches to play with at the moment,' says Bondar.

'We have 0.6 micron Arm610s from VLSI Technology, 0.6 micron Arm710s from GPS (GEC Plessey Semiconductors) and second-generation 0.7 micron Arm700s from GPS.'

Bondar adds that the different chips appear to run reliably between 35MHz and 48MHz, with some samples running happily at 55MHz. He also says that the next Risc PC Arm processor chip replacement will carry at least a 50 per cent performance advantage over the 30MHz part.

Bondar even has something to say about Arm800 technology. 'Arm800 is going well, better than expected, and I hope to be able to show journalists and developers working silicon ahead of schedule, probably at the end of the year.'

ISA bus adapter

PERENNIAL ACORN peripheral hardware designer, Patrick Arnold, is putting the finishing touches to his ISA Bus Adapter project.

This enables an Archimedes to use standard IBM PC ISA (industry standard architecture) expansion cards, like CD-Rom, IDE and SCSI drive interfaces, sound and graphics cards, IEEE interface cards and a lot more.

This addresses one of the main reservations surrounding the Risc PC. Arnold has designed an Archimedes podule base card which is linked via a ribbon cable to a motherboard fitted with ISA expansion slots. This would live inside a cased metal chassis, probably an off-the-shelf PC case.

Risc OS support software enables card-specific software drivers to be installed, enabling Risc OS software on an Archimedes or Risc PC to address PC ISA cards fitted. A prototype has been working successfully for some months and the next stage is to produce a pre-production version for final bug-fixing.

With attention focussed on PC software compatibility for the Risc PC, Arnold has found there has been interest in his ISA Bus Adapter from third-party Acorn peripheral developers. However he originally designed the adapter for the benefit of Risc OS applications. 'It's possible the ISA Bus Adapter could be used with the Risc PC's PC card, but the main reason for developing this product was to enable Archimedes users to make use of inexpensive PC expansion cards which are either non-existent in Acorn form or too expensive to develop natively.'

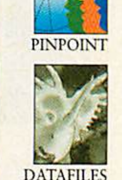
Patrick Arnold hopes his ISA Bus Adapter will be ready for sale by Acorn World in October and will cost between £200-£250. Patrick can be contacted on telephone (0373) 464957.

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Thankfully, at Longman Logotron we offer an alternative approach. We know how good our software is, but we also know how precious your time is. So we're not going to inundate you with detailed information. Instead, we suggest you have a word with any of your colleagues or friends who've used one of our packages before. If they don't convince you to choose Longman Logotron, no amount of hyperbole on a page will.

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LONGMAN LOGOTRON 124 CAMBRIDGE SCIENCE PARK MILTON ROAD CAMBRIDGE CB4 4ZS

Upgrade to a RISC PC *with BEEBUG*

Acorn's Largest Dedicated Dealer

The Risc PC offers significant advantages over the rest of the Acorn range. BEEBUG are making some exciting offers as well as giving you the opportunity to trade in your existing Acorn computer for a Risc PC.



SUPPORT *from BEEBUG*

- We will copy your existing data from your hard drive to the new machine.
- Tell us what software and versions you are using and we will provide advice and help on upgrading where necessary.

TRADE-IN *through BEEBUG*

- Call us with details of your current system and we will tell you how much allowance can be made for trade-in.
- We will take your existing system back for up to 3 months after purchase of a new Risc PC to give you a chance to get used to the new computer.

PRICES

All systems include 30MHz ARM 610 processor, 1.6Mb 3.5" floppy disc, 12 months on-site support, and 14" SVGA **Multiscan monitor.**

Code 3001g PC 600 2/210Mb	**£1249**
Code 3006g PC 600 5/210Mb	**£1399**
Code 3011g PC 600 9/420Mb	**£1699**

For 17" SVGA multiscan monitor add **£400**.

Features

- Six times faster picture manipulation than a 66MHz 486DX2
- Low cost processor upgrade strategy, allows upgrade to ARM 700 & 800
- Low cost access to PC DOS and Windows
- Lightening fast manipulation of still and moving images
- New 1600 x 1200 resolution display with 16 million colours
- Full multimedia capability and PhotoCD capability
- Expandable RAM up to 256Mb, plus up to 2Mb video memory

UPGRADES

1Mb VRAM	£129
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210Mb HD	£199
420Mb HD	£299
Case for extra slice	£99
PC Card	£99

All fitted prior to despatch if required.

CALL FOR A FREE COLOUR BROCHURE ON THE RISC PC OR SEND A 12 x 7 SAE FOR A FREE COPY OF RISC USER'S IN DEPTH REVIEW.

SPECIAL LAUNCH OFFERS

Either- SOFTWARE OFFER
Choose absolutely FREE any FOUR of the following items when you buy your new Risc PC.

- **Artisan 2** *Worth* **£50**
- **Ovation** DTP *Worth* **£99**
- **Pipedream 3** *Worth* **£71**
- **Schema** *Worth* **£114**
- **Chess** *Worth* **£5**
- **10 HD (2Mb)** blank discs. *Worth* **£12**

or- Order a PC Card when you purchase for just **£25**

PLUS All BEEBUG Risc PC computers have a Discount Voucher for the purchase of Clares new ProArt 24 painting package.

BEEBUG

BEEBUG Ltd
117 Hatfield Road, St Albans, Herts, AL1 4JS
Tel: 0727 840303 Fax: 0727 860263 Telesales Hotline 0727 840305

U K carrier delivery £8. Prices do not include VAT



Going continental

WITH THE revelation that Acorn has put its money where its mouth is and invested £700,000 in setting up the Acorn Germany subsidiary, it's of even greater interest to find out how well the Risc PC roll out has fared in Germany and surrounding countries.

Acorn's Bob Coates, who is in charge of international operations, reports that there has been an enthusiastic reception for the Risc PC in Germany, Switzerland and the Netherlands during a recent roadshow to introduce the new machine on the continent.

One of the best roadshow events was in Zurich, Switzerland, according to Coates.

There the roadshow was hosted by the British Consulate and a number of interested parties from big companies outside Acorn's usual markets, like Nestlé and Siemens, turned up.

'The reaction from journalists in Munich was very encouraging while in Dusseldorf, on a national holiday, there was a one hour queue to see the machines,' added Coates.

The computer department sales force from the Dortmund Karstadt department store chain, which is rather like John Lewis here in the UK, took time off to visit the roadshow and arranged an additional in-store event to promote Acorn computers on 20 June.

An unusual move was Karstadt's suggestion that other local computer dealers take part in the event.

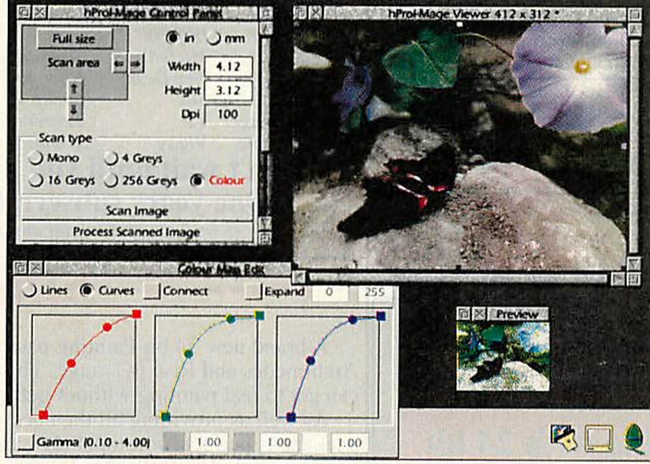
Universities have been visited too and a national students' free glossy magazine, called *Unicum* and with a circulation of 320,000, produced a Risc PC feature.

There is also hopeful news that *Archimedes Computer Faszination*, the German magazine for Acorn users, will re-start after an absence of six months.

Irlam Instruments update

A NEW real-time video and sound digitiser tops the news from Irlam Instruments this month. There is also new 24-bit scanner software, Canon IX-4015 scanner compatibility and Risc PC product news.

Irlam's new real-time 24i 1.6 Video Audio digitising system, which is the result of expertise gained from producing the Acorn Replay DIY multimedia kit, can sample image data at up to 24 bits per pixel and capture complete TV fields of 768 pixels by 288 lines.



Irlam's new 24-bit scanner software

Video is hardware scaled and filtered and images are properly anti-aliased. The user has control over the movie image size and frame rate. Irlam says this means it's possible to grab movies at sizes other than the so-called standard of 160 pixels by 128 lines for the first time.

A megabyte of VRam is supported to enable the real-time grabbing of images up to 768x576 pixels. Both Pal and S-Video inputs are provided, while contrast, hue, brightness and saturation are software adjustable.

Included in the card is a 16-bit stereo audio sampler capable of direct-to-disc sampling rates and replay of between 5KHz and 48KHz (DAT rate), including CD-quality at 44.1KHz.

The card can also act as an audio signal enhancer and mixer for raw, unfiltered, audio generated by the computer's VIDC chip. Hardware video scaling and filtering is featured and there is proper anti-aliasing for smoother image quality. The card will be priced at £359 and should be available from July.

Away from real-time A/V digitising, Irlam has announced that the ProI-Mage scanner package has been updated to support Canon's compact new IX-4015 A4 24-bit colour flat bed scanner.

A special bundle, including the Canon scanner, ProI-Mage, leads and *ImageBank* software, has been put together for the asking price of £659 + VAT. New software has been produced by Irlam for the Logitech 24-bit colour hand scanner. This now has a direct scan-to-disc facility to reduce the free memory requirement of the user's machine and there is an instant preview option as well.

A full range of colour map controls is included and there is support for 32-bit sprites, 24-bit Clear files TIFF and JPEG file formats.

Irlam's full-size single-width scanner card for the Logitech hand scanner is available for A5000, A4xx/540 and Risc PC machines. All Irlam scanning hardware and software, bar the Moving i-Mage, is now Risc PC compatible and able to exploit true colour screen modes. For more information, contact Irlam Instruments on (0895) 811401.

IT Leasing Scheme

Independent Options is a new IT leasing scheme from Acorn for independent schools. Peter Talbot, Acorn's general manager of UK education, explained: 'Leasing allows independent schools to install state-of-the-art computer systems without paying out large sums up-front.'

The scheme also allows schools to swap out old hardware for new during the rental period, keeping the school's computing facilities up to date.

For more information contact Options Administrator, Dawn McKenna, on 061-832 6925.

Publishing system installed

Swanage-based Purbeck Press has installed an Acorn Risc PC-based Graphtex 400 Publishing System from Acorn partner company, AB-Dick-Itek.

Originally interested in an Apple Mac system to replace old technology, Purbeck Press lost confidence in Mac-based systems because Apple kept introducing too many new models, making recently introduced offerings obsolete.

Design Processor

Oak Solutions has produced a new version of its *Design Processor* package, developed with the national Association of Advisers and Inspectors in Design and Technology.

This includes *Oak PCB* and *DrawPlot* as well as the newly released titles *Genesis Professional* and *Appolonius PDT*.

Design Processor is to be launched in September and is offered at £1200, payable over three years. The package actually includes over £3000 worth of software, documentation and guaranteed upgrades.

A new Risc PC version of Oak's £50 + VAT morphing application, *Rephorm*, has been produced to support embedded sprite editing and extended colour graphics. Oak Solutions can be contacted on (0532) 326992.

PINEAPPLE SOFTWARE

Special Offer!!

Free membership of the Pineapple Virus Protection Scheme is included with every computer purchased.

A3010 Computers

A3010 Action Pack
Includes Startwrite, & Zool, with demos of Lemmings, Chuckrock, Superpool and Fervour — 1Mb Ram — **£ 339**
A3010 Learning Curve
Includes 2Mb Ram, Colour Monitor, and LC Software — **£ 637**

A3020 Computers

A3020 System — **£ 675**
Includes 2Mb Ram and Colour Monitor
MultiScan Monitor — add £ 42

A4000 Computers

A4000 HD80 System — **£ 850**
Includes 2Mb Ram, 105Mb Harddisc and Colour Monitor
Multiscan Monitor — add £ 42

A5000 Computers

A5000 2M HD80 System — **£1150**
Includes 2Mb Ram, 210Mb Harddisc and Multiscan Monitor
4Mb Ram — add £ 129

Learning Curve System

The Learning Curve System can be purchased with the A3010, A4000 or A5000 range of computers. It consists of an audio instruction tape and software including,- Acorn Advance and the PC emulator, £ 42

Home Office System

The Home Office System can be purchased with the A4000 or A5000. It consists of an audio instruction tape and software including,- EasiWriter, Datapower, Pipedream 4 and the PC Emulator £ 85

A4 Portable Computer

A4 2M FD System — Includes 2Mb Ram — **£1399**
A4 4M HD 60 System — Includes 4Mb Ram and 60Mb HD — **£1699**

!!New From Acorn!!

The Risc PC 600 range - Modular, Upgradeable, Expandable with 24 bit colour screen modes

Risc PC 600

All the following models include 14" high res SVGA col monitor (AKF60)

2M HD210 — 2Mb ram 210 Mb Harddisc — **£1249**
5M HD210 — 5Mb ram 210 Mb Harddisc — **£1399**
9M HD420 — 9Mb ram 420 Mb Harddisc — **£1699**
17" high resolution SVGA colour monitor (AKF85) — add £ 400

Special COLOUR PRINTER Offer - BJC600

The latest in colour printer technology from Canon
Price includes a second set of ink cartridges — **£449**
Many other makes and types of printer available.

Other Items

We can supply all Acorn Hardware and software items even if they are not shown in this advert.
Please 'phone us for special package prices.
Our telephone advice line is always available to give you advice about future purchases and any problems you may experience in using Acorn equipment.

Most items ordered before 4.30 sent by RETURN post

 Acorn Authorised Dealer 

!KILLER

Removes ALL known VIRUSES

Don't take chances with your valuable software. Use the program that Acorn themselves use to check for viruses.

!Killer, together with VProtect will detect and remove all of the currently known 64 families of virus (96 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by phone. !Killer can scan any filing system or device including floppies, harddiscs, networks, even CDRoms. All types of compressed files can also be scanned. All infected files are fully restored without having to reload files from master discs. !Killer can detect and remove more than three times as many viruses as any other anti-virus software so why not join



Alien	*Appmanager*	*Aprilfool*	*Archie*	*Arcuebus*	*Axishack*
BBCEconet	*Bigfoot*	*Boohoo*	*Breakfast*	*CeBit*	*Code*
Crawler	*Cruncher*	*Deathstar*	*DieHard*	*Dratsab*	*Ebeneezer*
EMod	*Ex_port*	*Extend*	*ExtendV2*	*FCodex*	*Funky*
Garfield_I	*Garfield_W*	*Handler*	*Icon*	*Image*	*Image2*
Increment	*IRQFix*	*Link*	*Machine*	*Marion*	*MemManager*
MHelp	*Mode87*	*Module*	*MonitorDat*	*MyMod*	*NetManager*
NetStatus	*NewDesk*	*Nitemare*	*Parasite*	*Penicillin*	*Poltergeist*
Runopt	*Shy*	*Sprite*	*SpriteUtils*	*System*	*System2*
Taskmanager	*T2*	*Terminator*	*Thanatos*	*TrapHandler*	*Valid*
VanDamme	*Vigay*	*Whoops*	*Wimpman*		

Don't wait until you discover you have a virus!
One years subscription costs just £24.00
Low cost school and county licences available

----------Studio24---------

A brand new 24 bit Painting package to cover the whole of Acorns Archimedes and Risc PC range. This package is just about as close as you can get to real painting without getting your hands dirty!

As well as providing all the necessary tools for painting applications, the package is perfect for retouching existing sprites and Photo CD images. Features include:- Definable brushes and textures, Opacity control, Brush movement smoothing, Clone brush, Smudge brush, Effects brush, Processing and definable filters, Linear and Radial fills, Cut & Paste, Undo/Redo, Stencil screen, Warping, Multiple canvasses, Text and many other powerful features. As with all our products software updates and improvements will be free.

Price £125.00 + vat — **Demo disc £5.00 + vat (Refundable)**

Pineapple PAL Coder

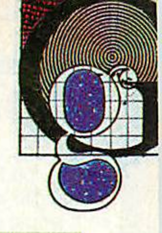
The Pineapple PAL Coder is a stand alone unit which provides a coded signal which can be recorded onto VHS or fed to any monitor or TV set with a coded input. The unit is inserted in the lead to the RGB monitor and provides an RGB output for the monitor together with a PAL coded output on a BNC socket. A second version also provides an output in S-VHS format as well as composite. Now available for Multiscan as well as standard monitors. Upgrade available for existing owners.

Standard Version £69.00 — **S-VHS £79.00**

Terms:- Please add 17.5% vat.
Carriage FREE to mainland UK.
Phone for quote outside UK.
Official orders, cheques, and all major credit cards accepted.
Money back guarantee on all products

Pineapple Software
39, Brownlea Gardens
Seven Kings
Ilford, Essex
IG3 9NL

Telephone Hot Line service on all products
Tel 081 599 1476 — Fax 081 598 2343



The wait is over

ARCHITECH, arguably the fastest and most powerful solids modelling program for the Acorn has finally been released after its debut showing all the way back at BETT '94.

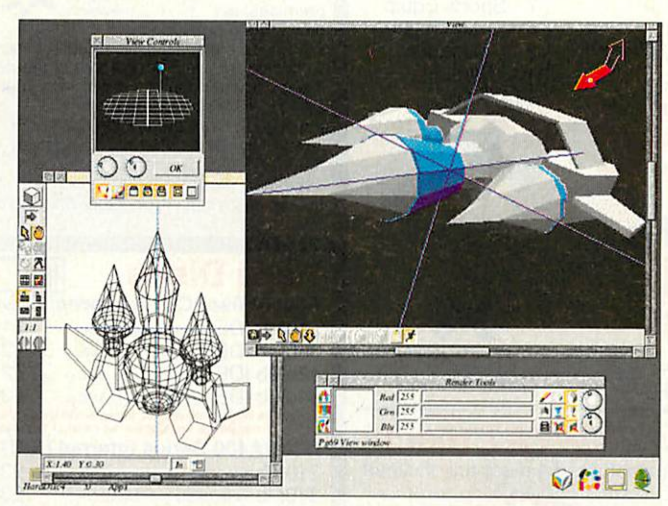
The application has been refined in most respects to the highest standards; the six application discs are accompanied in a beautifully packaged box with an excellent manual, the likes of which are usually reserved for the products of larger PC software houses.

In a nutshell, *Architech* is a 3D vector object and composition modeller with animation facilities.

One disappointing aspect of the program is the low resolution icons which contrast with the now standard high resolution icons of Risc OS, and practically all software that's been released since the *!Sprites22* standard was introduced.

The program will be given a full review in a later issue, but at first glance it can be safely said that the program is probably the best thing since *Euclid*.

For presentations and for easy realisation of conceptual solids, models, buildings – you name it – Achitech claims to and seemingly will do the job.



Architech brings superior 3D modelling to the Archimedes

Something that does impress is the real-time texture mapping and fast animation generated by the program.

Though Acorn software has not reached the heights of optimised PC software and games such as the now legendary adventure-come-complete-carnage game, *Doom*, with its 25 frames/sec of perspectivised animation, Architech does represent a significant step in the right direction with a fast and simple enough environment for designing, manipulating and viewing 3D creations.

Files can be output as *Replay* animations, Ace Films, 'nets' – print, cut-out and construct models – as well as *Draw* files and *Spex* files.

With Acorn rapidly moving into higher-end markets, especially in the area of graphics, it would be wrong to prospectively regard *Architech* as the Acorn answer to professional modelling and CAD requirements.

However, from first impressions *Architech* looks like a powerful and highly usable product. Aspex can be contacted on (0822) 611060.

Coming soon



Picture of the month from Kane Clover

FINALLY we have room for a Pic of the month. Don't worry if you haven't seen your masterpiece in print yet – we have a huge backlog of worthy winners which will be rejudged each month. Kane Clover is this month's winner of the £20 prize with an image called Spiked.

This was created using *Euclid* for the 'spiked thing' and *ProArt2* for rest of the composition.

Please help

IF ANY readers have any practical, intriguing or ingenious ideas with regards to improving or developing graphics software, your suggestions would be greatly appreciated.

The Graphics Page will aim to publish the suggestions (with appropriate graphical illustrations of your concepts) and advance your ideas to software houses for future developments. Looking forward to hearing from you.

Rembrandt

A NEW shareware painting package has hit the PD scene.

Rembrandt, by Ben Brown, is easy-to-use and should provide much entertainment for entry level and younger users.

Quality Genlock

The MultiGen GenLock adaptor is a HiBand video generator which works with any Acorn/BBC machine.

It is an external device and works with any Acorn/BBC machine, and can encode for both PAL and NTSC formats at the flick of a switch.

Titler can be bought at a reduced price with the adaptor for quality text overlays.

The remarkable but limited price of £362 + VAT is extremely good value – look out for a 'hands-on' opinion soon.

Sonamara Computer Video can be contacted on (0626) 873763.

PhotoDesk v.1.11

As an example of Spacetech's dedication to improvement, I have already received a new version of photo retouching and painting package for all RiscOS machines, *PhotoDesk*.

Version 1.11 features significantly improved virtual memory and additional features to the version reviewed in this month's painting package review.

Photo-retouching on older machines

It is less widely known than it should be that most of the top-spec bitmap graphics packages will run on pre-Risc PC machines.

Da's Picture was in fact designed on an A5000, and will wun with no problems on the older machines, as will *PhotoDesk* from Spacetech and *Studio24* from Pineapple. Of the currently available packages, only *ProArtisan24* requires a Risc PC.

You can contact the Graphics Page by writing to Jack Kreindler, at The Graphics Page, *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP.

In addition, Pics of the month, suggestions for software improvements and general comments can be sent to jack@acornusr.demon.co.uk.

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT)

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 12 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.



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TopicArt catalogue now available. £1.50 Inc VAT & p+p (cheques only)



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TopicArt12 - AnimalsGB

SpecialArt(Xmas or Signs) £20+VAT (each)

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart





Training £50+VAT

RiscOS Computing For Beginners

New

This friendly informal one day course, held at our premises, is designed to provide you with these essential skills enabling you to work wonders with your Acorn computer. Topics covered include optimising your computer set up, running/using applications, understanding computer jargon, using printers, managing files, troubleshooting, expanding your computer, plus many more. Ring for details of special introductory offers and dates.

CD-ROM



Excellent value Sony Caddy Loading SCSI CD-ROM drive complete with external case, PSU, caddy and CDFS driver (CDFS2.21 required). Double speed (300kb/s), 295ms access time and Photo CD compatible. Suitable for all RiscOS computers. Can also be fitted internally on the RiscPC. When fitted in a RiscPC maximum expansion facilities are retained unlike other IDE CD-ROM options!

without SCSI card	**£175**
with SCSI card	**£299**

The above price is for a Morley uncached SCSI card.

Hard Discs

A5000/RiscPC 2nd Internal Drive

210Mb IDE 14ms Cache (~1Mb/s)	£169
340Mb IDE 14ms Cache (~1.2Mb/s)	£239
420Mb IDE 14ms Cache (~1.5Mb/s)	£279
540Mb IDE 12ms Cache (~1.5Mb/s)	£399

The above include all cables, screws and instructions. All the above drives are Connor as used in the RiscPC

A300/A400 Series Internal (IDE)

210Mb 14ms Cache (~1Mb/s)	£249
340Mb 14ms Cache (~1.2Mb/s)	£309
420Mb 14ms Cache (~1.5Mb/s)	£359
540Mb 12ms Cache (~1.5Mb/s)	£479

The above include all cables, screws and instructions. Add £79 for ext case and/or £15 for A3000 podule case. All the above drives are Connor as used in the RiscPC

A3000 Internal IDE HardCards

20Mb + User Port	£159
80Mb + User Port	£229

For other storage devices please refer to Hard disc/ Syquest section below.

QuickTile v1.01 £25+VAT



Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references.

Requires RISCOS 3.10 or later.
Send v1.00 disc back for free upgrade.
Upgrade from Tiler for £15+VAT

Hardware, Software & Books (All prices exclude VAT)

New RiscPC 600

Ring now for special deals. 0% and low finance avail.

We operate Acorn Assist for teachers & academics

RiscPC 2MHD210 £1199
ARM610, 2Mb DRAM, 210MbHD, HD Floppy, AKF60 Monitor.

RiscPC 5MHD210 £1299
ARM610, 4Mb DRAM, 1Mb VRAM, 210Mb HD, HD floppy, AKF60 Monitor

RiscPC 9MHD420 £1599
ARM610, 8Mb DRAM, 1Mb VRAM, 420Mb HD, HD floppy, AKF60 Monitor

Add £400 for 17" AKF85 Monitor

RiscPC Upgrades

4Mb Simm RAM	£125
8Mb Simm RAM	£230
16Mb Simm RAM	£450
32Mb Simm RAM	£950
1Mb VRAM	£129
2Mb VRAM	£149
1 to 2Mb VRAM Upgrade (exchange)	£109
Connor 210Mb Hard Drive	£179
Connor 420Mb Hard Drive	£279
486 PC Upgrade (available ~Oct 94)	£199
2nd Slice Case Upgrade	£99
Acorn Access for RiscPC	£119
Ethernet Interface Card	£99
Econet Interface Card	£49

A Series

A3010 Action Pack 1Mb RAM	£315
Above includes Lotus Turbo Challenge II	
A3010 Learning Curve (No Monitor)	£400
A3020 2MFD/AKF40 System	£660
A3020 2MHD60/AKF40 System	£800
A4000 2MHD80/AKF40 System	£830

Add £43 for AKF52 MultiScan Mon.
Add £107 for AKF50 0.28dp Monitor
For A4000 only add £250 for 1Mb 386PC card and £450 for 4Mb 486PC card (Above excludes A3010 computers)

Learning Curve £42

Includes Acorn Advance & PC Emulator & demos of Applications & Games

Home Office £85

Includes EasiWriter2, DataPower, PipeDream4, PC Emulator & demos

The above software packs are available with any of the above computers except A3010. They are not available separately.

Portable Computers

Acorn Pocket Book	£169
Psion 3 (256k)	£175
Psion 3a (512k)	£249
A-Link for Pocket Book or Psion 3/3a	£51
A4 Portable 4MHD60	£1599

Monitors

Acorn AKF52 14" 0.39dp MultiScan	£250
Acorn AKF50 14" 0.28dp MultiScan	£310
Acorn AKF60 14" 0.28dp MultiScan	£325
Acorn AKF80 17" 0.28dp MultiScan	£999
Microvitec Cub Scan 1440 (3yr warr)	£310

Hardware Upgrades

ARM3 (25MHz, Inc FPA socket)	£139
Joystick Interface (all m/c's)	£28
Midi Expansion Card	£69
Powerpad (dual) (Gamesware)	£34
Scanlight Video 256	£199
ScanLight Professional	£549
Vision24 Colour Digitiser	Int £99/Ext £112
Hi-Vision24 Digitiser A5000	Int £149/Ext £165
Vision upgrades	Mono-Vision24 £70
	Vision24-HiVision24 £60

RAM Upgrades

A3000 Up to	2Mb £55/4Mb £129
A3010	2Mb £40 / 2-4Mb £100 / 1-4Mb £140
A3020/A4000 Up to 4Mb	£85
A5000 Up to	4Mb £85 / 8Mb £280
A400 RAM	£40 per Mb
A300-A400 8Mb RAM	£280

Hard Discs/Syquest

The following are complete systems.

A3010 HCCS Hard Disc Multi-Podule	
20Mb + User Port	£215
80Mb + User Port	£299
SCSI Archimedes Internal	
127Mb 17ms Cache	£319
210Mb 15ms Cache	£40
Syquest Removable Hard Discs (No card)	
IDE 105Mb Internal for A5000/RiscPC	£249
SCSI 105Mb External for all machines	£349
105Mb Syquest Cartridges	£55

CD-ROM Drives

Sony Caddy CD-ROM 300kb/s 295ms	£175
Includes extl. case, PSU, caddy & Driver	
Toshiba External caddy loading CD-ROM 330kb/s with 200ms access time.	£399

The above drives exclude SCSI Card

DIY Ink Jet Refills

Single Refills (req an orig cartr.)	£7
Twin Refills (req an orig cartr.)	£12
125ml / 400ml Cleaning Kit	£4 / £10

These do-it-yourself refills can be used with any printer where the head and ink reservoir are combined. Available in Black, Cyan, Magenta, Yellow, Red, Green, Blue and Brown. Note that colour quality may not be 100% from a black cartridge refilled with another colour. We cannot guarantee against dried up cartridges and/or blocked nozzles. If you want 100% results only buy original cartridges or buy a colour printer! Please do not send empty cartridges.

RiscOS 3.1 Upgrades

A300/A440 Series	£97.88
A400/1, A3000, A540 Series	£75.75
Bulk Pack of ten upgrades	£339.00

Please add £4 (Inc VAT) carriage to above

Remember Carriage is free on most items

Printers (Inc Cable)

Canon BJ-10sx	£155
Canon BJ-10 Sheet Feeder	£50
Canon BJ-200	£220
Canon BJ-230	£280
Canon BJC-600	£445
Canon BJC-800 Turbo	£1200
HP LaserJet 4L (300dpi)	£500

Add £35 to above printers for TurboDriver

Printer Consumables

BJ-10 Ink Cartridge (BC-01)	£18/£19
BJ-200 Ink Cartridge (BC-02)	£18/£19
BJ-300 Ink Cartridge (BJI-642)	£17
BJ-600 Black Cartr. (BJI-201)	£8
BJ-600 Colour Cartr. (BJI-201)	£9
BJ-800 Black Cartr. (BJI-643)	£18
BJ-800 Colour Cartr. (BJI-643)	£21
DeskJet500 Mono/Col Cartr.	£23/£24
Swift24 Mono/Col Ribbon ea.	£7/£15

Books (No VAT)

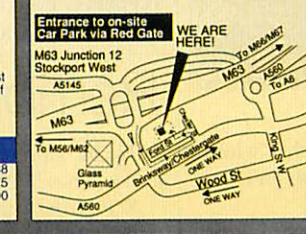
Acorn RISCOS3 PRM's	£99.00
Add £7 (Inc VAT) carriage for PRM's	
Acorn BBC Basic VI Guide	£19.95
Acorn AASM Manual	£25.00
Acorn ANSI C v4 Manual	£25.00
ArtWorks Made Easy (Dabs)	£14.95
Begin's Guide to WIMP Prog	£12.95
DTP on the Archimedes (Sig.)	£12.95
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Add £1 Carr to above (£3 for Acorn books)

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AUG 94



Express launch Intertex modems

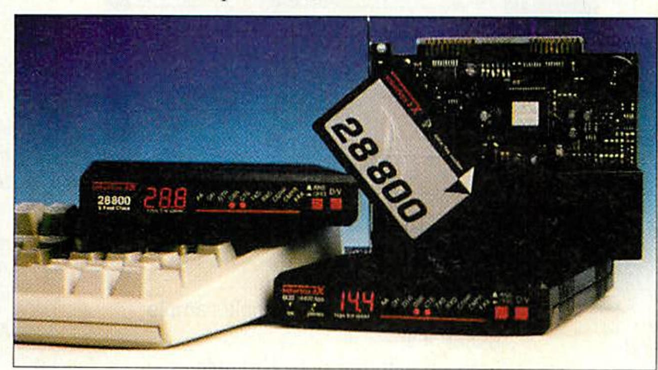
EXPRESS TECHNOLOGY, the importer of the popular BABT-approved Zoom 14.4X fax/data modem, has closed a deal with the Swedish modem manufacturer Intertex Data AB to launch no less than seven new BABT-approved products, with three V.Fast Class modems at the top of the range.

The range includes PC internal and PCMCIA versions, but of more interest to Acorn users are the desktop models. These are slim, small-footprint designs which come complete with internal fax/phone switching.

Most have a digital display showing the connect speed, and the usual row of status LEDs. The V.Fast Class model features 28.8 bps oper-ation, as well as compatibility with all lower speeds. An optional Flash Rom enables user upgrade of the internal software, but there's no mention at this stage of the cost of a V34 upgrade. This model will retail at £299 + VAT.

The V32bis model, at £219 + VAT, includes Rockwell Voice support, enabling you to create an answering machine or electronic receptionist, or even fax-on-demand or other voice applications. The straight V32bis modem still offers all speeds to 14,400 bps with V42, V42bis and up to MNP10 data transfer standard, fax/phone switch and will retail at £169 + VAT.

Call Express Technology on (0784) 421123 for more details.



The new V.Fast Class modem from Express Technology

Reading the news

ONCE you have downloaded some Usenet newsgroups and received e-mail with your Demon account, you will soon tire of trying to use *Edit* to read and reply to messages.

Although *ReadNews* is a PD off-line-reader (OLR) for uucp format mail that can be used with the *KA9Q* package, it is also quite cumbersome to set up and use.

I use the Careware program *ReaderS* by Anthony Frost for my own Demon e-mail and news messages. For the Demon option, an small extra configuration file is required.

This should be located inside the resource application *ReadBack* provided with *ReaderS*, before you run the program. This is a short text file called *DemXtra*, and should contain the following fields with your own arguments as appropriate – here's mine:

```
Domain arcade.demon.co.uk
user DaviD
real_name David Dade
gateway news.demon.co.uk
organization Arcade BBS
```

You need to set *ReaderS* up for 'Demon' format messages using the icon bar menu. To start reading e-mail or news, just drag an e-mail or newsgroup text file onto the icon bar icon. After a short period of hourglass activity the first message will appear in the *ReaderS* window. You will notice that unlike BBS and Fidonet messaging, in a newsgroup message there is no 'To:' field in the message header you see.

Therefore, when you reply to a message, in order to keep the 'threading' and references sensible, you really need to add a line at the top of your message saying something like:

```
In article <you-need-to
quote-the-Message-ID-here>
Piers Bloggins wrote:
 >blah blah blah
 >etc.
```

Of course private e-mail is always 'To:' you, so you don't need to bother about the reference in e-mail messages. When you've finished typing your new message or reply, you click on 'Sign' which creates a proper mail header for the message for *KA9Q* to send next time you call Demon.

ReaderS is available for only £10 from the author Anthony Frost at 10 Whiterocks Park, St. Anns Chapel, Gunnislake, Cornwall PL18 9EF. All the money goes to local charities.

Anthony Frost's *ReaderS* program for reading news and e-mail

HENSA revisited

After last month's item on the new HENSA archive system at the existing site, I received this e-mail note from Martin Kalugin of Lancaster University Information Systems Services.

'I am the manager of the HENSA/micros software archive and was delighted to see the article in *Acorn User* about HENSA/micros II.

'However, I would like to point out that we have already moved to HENSA/ micros II and people should use the address micros.hensa.ac.uk NOT mic2.hensa.ac.uk.'

USR V.FC products

Look out for the UK release of three new Sportster V.FC modems – the fastest Sportsters to date – which should already be available in the US by now.

When the new ITU-T V.34 standard for 28.8Kbps data transmission is finalised later this year, US Robotics will offer Sportster V.FC users an EPROM (chip) upgrade.

Users in the US will be able to do the chip swap themselves or send the modem back to the company, but unlike the V.FC to V34 Flash-ROM upgrade for the new Courier recently mentioned, there'll be a charge for the chip.

Acorn User on the Net

The *Acorn User* editorial office now has a permanent e-mail address via the 'acornusr' hostname on Demon Internet Systems. You can contact the Editor, Mark Moxon at Mark@acornusr.demon.co.uk and the Deputy Editor, David Matthewman at David@acornusr.demon.co.uk.

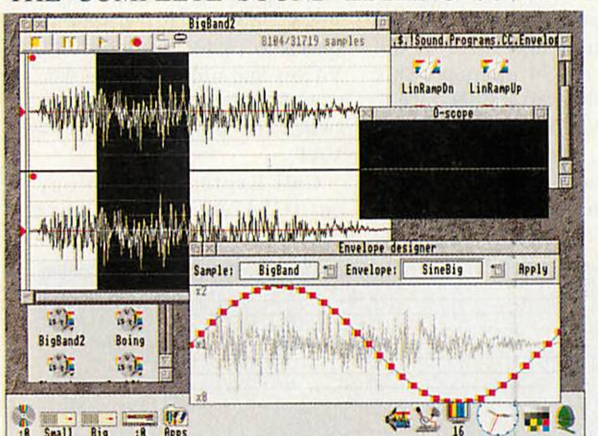
Acorn User can also be contacted by BBS users and by FidoNet Netmail via an account on Arcade BBS with user name 'Acorn User'.

You can contact the Comms page by writing to: David Dade, Acorn User, Europress Publications Ltd.,Europa House, Adlington Park, Macclesfield, SK10 4NP or by e-mail to: DaviD@arcade.demon.co.uk, or by MODEM on Arcade BBS, User #2 - 081-654 2212 or 081-655 4412.

AudioWorks

THE COMPLETE SOUND EDITING SUITE FOR ACORN RISC COMPUTERS

The audio capabilities of the Acorn computer have seldom been exploited - but all Acorn 32 bit computers have the ability to play back high quality stereo samples. AudioWorks provides a complete suite of sound editing functions in one easy to use, low cost application.



FEATURES

- Support for 8 bit, 12 bit, 16 bit, linear signed, linear unsigned, VIDC logarithmic, m - law logarithmic, mono and stereo samples.
- Accurate waveform display with instantaneous zoom.
- Cut, copy and paste of any selected part of the sound sample, repeat loops.
- Effects such as echo, reverse echo, amplify, wave form centering, ramp, pitch and amplitude bending, high and low pass filtering, re-sampling etc.
- On screen real-time spectrum analyser and oscilloscope displays.
- Compatibility with a whole range of sound files, including Microsoft .WAV, Armadeus, DataVox, SoundTracker, Creative Voice File, Acorn Replay Movies, Digital Symphony, EMR Sound Synth etc.
- Full background operation.
- Multiple channel and multiple sample operations.
- Supplied with the AudioCtrl utility, which allows you to attach your own sound sample to many different desktop events, such as opening or closing a window or saving a file.

RRP: £49.00 + VAT (£57.57 incl.)

2 Mbytes required

REVIEWS

"Taking over as the standard for Archimedes sound sampling packages."

Acorn User

"AudioCtrl is brilliant!"

"If you are interested in any aspect of sound processing on the Archimedes, AudioWorks is the package for you."

"I was very impressed with its manual and fell in love with AudioCtrl from the moment I laid eyes on it."

Risc User

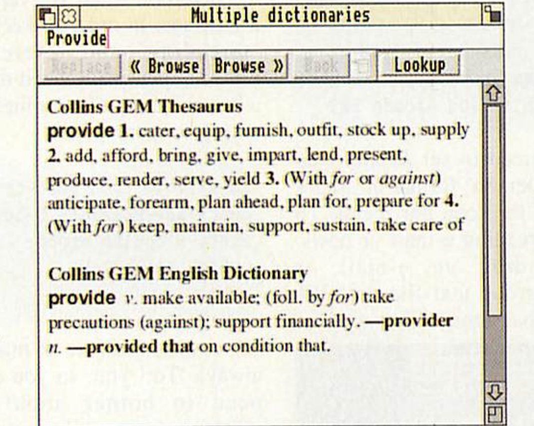
"AudioWorks is to sound, as Impression is to desktop publishing, it has definite class."

"In every area, this is a very polished application, with excellent interfaces - it's decidedly easy to learn and consequently very easy to use."

OnLine Magazine

WordWorks

This stand-alone application works with all word processors and is the ideal assistant for all word processor users.



FEATURES

- Includes a complete English dictionary with full explanations
- Uses licensed thesaurus and dictionary data from Collins, so you can be sure the information is up-to-date, accurate and of the highest quality.
- Presents an exact on-screen representation of the printed page of a traditional paper thesaurus and dictionary - including italics, highlights etc.
- Offers instantaneous lookup of words; once you've found the word or phrase you want, simply double click on it to transfer the selected word to your word processor or editor.
- Includes complete on-line hyper-text help.
- WordWorks advanced indexing system allows any word in the thesaurus or dictionary to be used as a search word, rather than the usual limitation to 'head words'.

REVIEWS

"WordWorks is a simple but extremely effective tool that is a must for all serious users who produce a lot of text."

Archimedes World

"It is a remarkably fast and incredibly useful piece of software."

"An extremely valuable language aid."

OnLine Magazine

"WordWorks is a doddle to use."

"WordWorks is excellent value."

Archive

RRP: £39.00 + VAT (£45.83 incl.)

2 Mbytes and a hard disc required



Computer Concepts Ltd

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What exactly is PostScript?

POSTSCRIPT is one of those words that appears to pop up everywhere in the computing industry. It is liberally used when describing printers, fonts, drivers, typesetters and now even displays.

Until the advent of PostScript, printers offering different printing resolutions and methods required a unique printer driver specially written for them.

PostScript gets round this since it 'describes' the page in terms of positions and types of objects, such as letters, lines and graphical shapes.

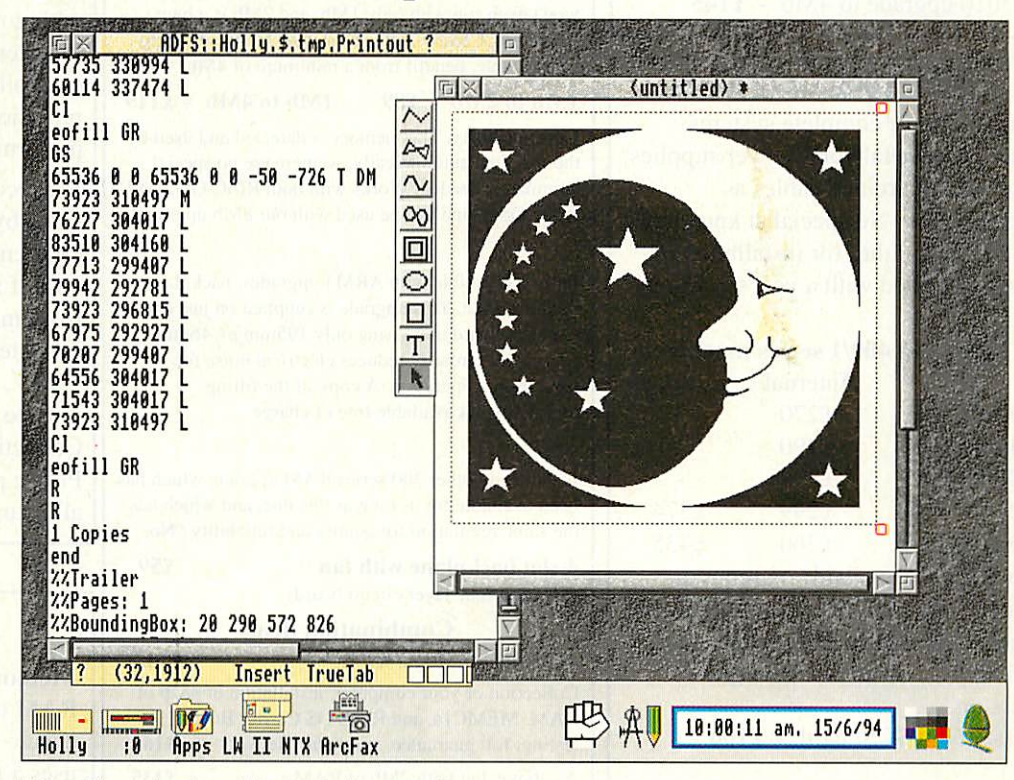
This description is 'interpreted' by the printer which decides which bits of the page to paint black and which bits to leave white (the same is of course true for colour). This is known as generating the raster or dot-based image, or raster image processing (RIP).

Since the page description uses a 'language' that is independent of the page contents or printer's abilities, PostScript files are easily portable and you have the guarantee that it will produce identical pages on different printers.

PostScript desribes individual graphical objects as a series of lines and curves enclosing filled areas.

The printer determines how to recreate these shapes on the page using dots of ink and thus functions at the limits of its resolution. Bitmaps present problems and are fed verbatim to the printer which reproduces a facsimile independently.

Letters of the alphabet are treated as separate graphical objects and this would lead to horrifically long output files if each letter had to be converted to a series of curves and lines.



A *Draw* file, and section of the PostScript output it generates

Thus printers often have common fonts stored internally so that the page description can be shortened to: the text, its size, typeface, position and orientation (angle).

This of course reduces the size of the file, but creates the problem of matching the fonts in the printer to those on the screen. Any mismatch would result in the output page not matching the screen page.

Thus PostScript compatible fonts are required. This defines all the characteristics of the font and thus ensures that the font in the printer matches the font in your computer.

PostScript printers often come with several fonts built in and the ability to plug in extra fonts using memory cartridges. Any fonts the printer doesn't have can be downloaded temporarily into the printer.

The printers also usually come with a sizable chunk of internal memory. Apart from holding downloaded fonts the printer has to hold the raster image of the page and at least some of the page description.

This consumes large chunks of memory and as a result PostScript printers often have the facility to expand the memory to several megabytes.

The printers are, as a result, frequently more expensive than simpler direct drive models since they require licensed fonts, internal Ram and a processor inside to interpret the page description. They do however have advantages. Almost without exception commercial image-setters and platemakers use PostScript and any PostScript printer can be plugged into any computer generating PostScript output.

Encapsulated PostScript (EPS) is a method of transferring smaller more manageable PostScript files between devices, although the files don't include any downloaded fonts or bitmaps.

PostScript is, however, quite old. A newer version, PostScript Level 2, has been written with the original version now being referred to as Level 1.

Display PostScript is a recent development designed for use internally by computers. It treats the screen in a similar manner to a printer, using a description language which the individual computer converts to the screen bitmap.

Coming soon

COMPUTER CONCEPTS is set to launch the *Publisher* OPI supplement shortly before the October Show and a replacement for *Equasor* entitled *Formulix* can be expected soon after.

It will also be supplementing its range of monochrome scanners with colour versions rumoured to include both flatbed and handheld colour units.

The Datafile continues to expand its range of licensed URW & Letraset fonts, though porting all 10,000 weights will take a long time.

Look Systems is aiming to have all 600 of its Monotype fonts ready for release at the October Show.

TJ's scanner

I MENTIONED last month that TJ Productions purchased a drum scanner and said it didn't quite offer professional quality scans. It may be worth pointing out that it performed as well as a million pound Magnascan.

So it does offer professional scans – but they are considerably cheaper. They are also offering full colour Chromalin proofing as well as an array of other services. TJ Productions can be contacted on 071-372 4430.

You can contact the DTP page by writing to: Steve Powell, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP



APDL takeover

AFTER several years of running the Datastream PD library, Phil Coleman has decided to hand over the running to Shareware guru and owner of APDL, David Holden.

David is obviously a bit overun with work, but is already supplying the Datastream catalogue and any software within it, as well as continuing to distribute APDL programs.

His intention is to 'merge' the libraries together, gradually phasing out the Datastream element and putting all the software into the APDL catalogue.

Standard DD discs from APDL and the Datastream catalogues are now £1.50, but all the usual APDL offers apply.

It's sad to see the number of PD libraries supplying the Archimedes scene dwindle and as I mentioned in the column last month, control by a small number of big libraries would not be a healthy situation.

Fortunately, in the case of the Datastream, the library has been taken over by a PD expert dedicated to the free software and shareware cause, but I'm sure many people, myself included, will miss the old style Datastream PD library. Last month saw the release of the Datafile's new catalogue and ordering system but Dave Holden has just avoided being left behind by releasing his own PD ordering software, imaginatively entitled *Order*.

The new ordering program from APDL

The APDL software is not an all in one catalogue browser and ordering sheet as with the Datafile system, but instead takes the form of a list of software and disc names which can be selected with a simple click in the window.

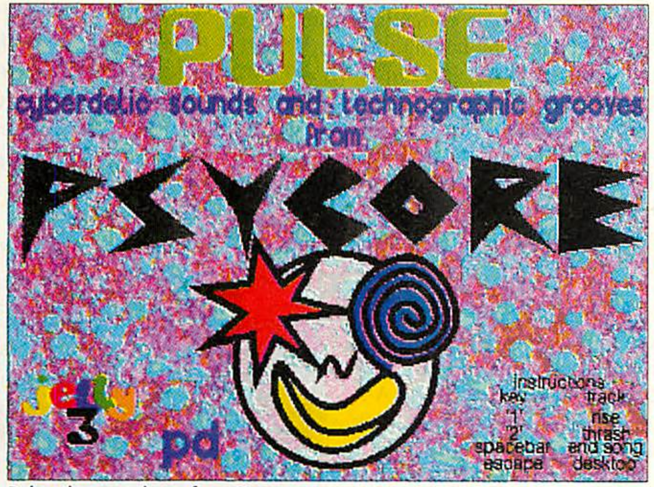
The cost of all the chosen items is totalled up by the program, and post and packing charges are calculated. The lack of any software descriptions within the ordering program – you have to view the old catalogue text files – is a serious drawback, but *Order* is incredibly easy to use and succeeds in taking the hassle out of ordering all those PD packed diskettes.

This is definitely a usable alternative to the Datafile's new catalogue but *Order* still has a long way to go to reach the top. APDL (incorporating the Datastream) is at: 39 Knighton Park Road, London, SE26 5RN.

Pulse techno demo

After coding their first techno demo – *AUX* – Psycore are back with another dosage of mind-blasting techno-thrash.

Pulse begins with a title screen which gives access to two excellent tunes and is definitely worth a look for music fans. If anyone from Psycore is reading this, please get in touch. *Pulse* is on disc DM127 from the Datafile.



Pulse, the new demo from Psycore

Zapped

Dominic Symes's excellent Public Domain editor, *Zap*, was recently updated to version 1.10. Unfortunately there was a bug in the initial release which could corrupt files.

The bug is very rare – it did not turn up during six months of testing – and only affects very long files with lots of excess spaces.

The problem – with the *ZapMJE* module – has now been fixed. This module can be found in the *3rdParty* directory within the *Zap* application. Modules with a date stamp after 6 June should be OK, and all copies of *Zap* available now should have been fixed.

The fixed *ZapMJE* module is available as a separate file from the Arcade bulletin board, and should also be available from anyone who distributes *Zap*.

FineArt

We had a great response to both the Acorn User *QTM* music player and the June Public Domain issue itself, but I've had enquiries from many people who couldn't get hold of the *FineArt* program featured in the Graphics article.

The highly recommended art program can be found on disc PR15 from Five Star Marketing.

Type find

The new file type identifier by Ben Schofield is one of those essential PD programs that always come in handy during that once-a-year clean up of your hard disc.

As PD editor I tend to rapidly fill up my storage space with hundreds of different files, only to find months later that I haven't got a clue what they are.

Nine times out of ten they turn out to be something incredibly useful that I've been looking for but without a file identifier I might have just thrown them away as trash.

Although it's not the first file type guesser to reach the desktop, *TypeFind* is quick, easy to use and bang up to date.

Simply drop those unidentified files onto the *TypeFind* icon and it will give its best guess as to the original file type.

TypeFind is on disc U35 from Five Star Marketing.

PD library

One of the cheapest PD services around can be found at the home of the ARM club. The ARM club PD library offers a range of software for only £1 per disc which is an excellent price. This low cost library is an excellent service that should be supported.

For more information contact: The ARM Club PD Library, FREEPOST ND6573, London N12 0BR.

Don't forget our continuing feature on the Acorn Club scene in the next issue of *Acorn User*.

You can contact the PD Page by writing to: Paul Wheatley, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: paul@acornusr.demon.co.uk



PTW software releases updates

PTW software has just released upgrades for most of its major programs including *KernPlus*, *KleinFS* (reviewed December 93), *Equate* (May 94) and *Chemistry*.

Stephen Tudway of PTW told me, almost apologetically, that prices have had to be increased. They are now all priced at £17.95 inc VAT and site licence, but these programs are still excellent value for money.

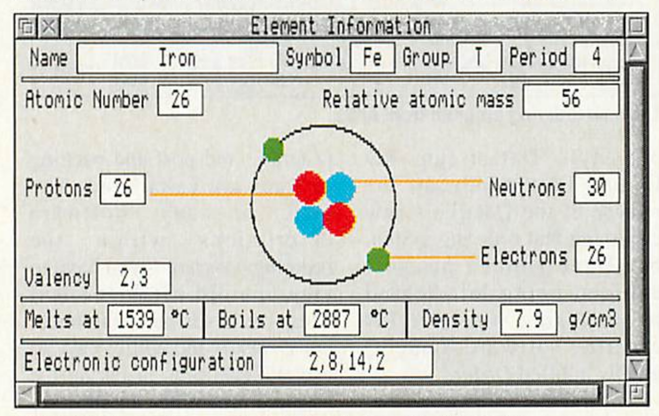
Chemistry is a rather classy database of the periodic table of elements. Clicking on the icon on the icon bar displays the familiar periodic table, and clicking on one of the element symbols displays three windows containing a diagram of the element, some information about the element and a text window containing further information which can be added to if required.

As with all PTW's software, *Chemistry* is well designed, easy to use, fully satisfies the purpose for which it is intended and includes a site licence.

If you've read my column in previous months, you'll know I'm not over keen on lots of clip art. This is mainly because most of it is either useless, or it's poor quality and useless.

PTW's *Technical Clip Art Collection* (£7.95 inc VAT and licence) is neither of these. Divided into three categories – Chemistry, Circuit and PCB – the disc contains everything you need to create diagrams which can then be included in DTP documents and used for worksheets or assignments.

The drawings are sensibly subdivided, all very carefully drawn and contain plenty of notes. PTW Software can be contacted on (0392) 281930.



PTW's database of the periodic table of elements, *Chemistry*

Computer control

This month the main education feature is computer control. Having read the reviews, I would like to hear from anyone who would be prepared to share their good practice, not only with control but any other Information Technology area of the National Curriculum.

Acorn Companion

Written by Geoff Love and costing £9, *The Acorn Companion* is packed full of useful hints and tips about using Acorn computers. This book will be extremely helpful to those just starting to use Acorn computers.

It is written clearly and simply, yet not patronisingly so. I find this style of writing particularly appealing so I've enlisted Geoff's help with the education pages of *Acorn User*. Welcome aboard, Geoff.

Northwest SEMERC can be contacted on 061-627 4469.

Sherston releases

Sherston continue to produce excellent material (mainly for Key Stages 1 and 2) which is both educationally sound and realistically priced.

Around the World in 80 Days is a Geography-based adventure for 9-12 year olds. For £39.95 you get three discs containing the main program, a fourth resources disc, six A5 work cards, four A4 workcards (all double-sided), log sheet, manual and a booklet entitled 'Classroom Ideas'.

Space City and *Sea Rescue* are £26.95 each and are the first two of a series of Mathematics adventures for KS2. *Space City* covers angles and *Sea Rescue* covers fractions. Both come on two discs, with a manual, poster and an assortment of worksheets.

Sherston can be contacted on (0666) 840433.

You can contact the Education Page by writing to Geoff Preston at Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP by or e-mail to GPreston@ arcade.demon.co.uk.

Wickersley stamps its mark

IN THE May issue of *Acorn User* I placed some stamp frames on the disc which I had used in the GCSE Design & Communication exam.

Wickersley Comprehensive School in Rotherham wrote and told me about their stamp design project which they had been running with their Year 9 (13-14 year old) students.

The brief was to design a postage stamp based on the theme of Endangered Species.

Images were captured from various sources, Skyfall PD fonts provided the text and the students put it together in *Draw*.

Excellent work, all of you. Sorry there's only space for one picture, so I chose Emily Downing's African Elephant.

AFRICAN ELEPHANT
1ST
ENDANGERED SPECIES

Emily Downing's endangered favourite

Betsi

4MATION, whose products include favourites such as *Flossy the Fog* and *Granny's Garden*, is a top educational software house who last year produced an authoring package for in-house products.

Its latest creation produced with the authoring package is *Betsi*, an historical adventure set in Tudor England and aimed at 7-12 year olds (Key Stage 2-3).

4Mation thinks that *Betsi* – a dog who is not very good at hunting – is its best education product to date, and having just seen a pre-release version, I concur.

Apart from the usual problem-solving activities, clicking on objects with adjust displays a few lines of text around the object. In fact, there are over 10,000 words available.

The price is £34.50 single user and £69 site licence. It includes an adult's resource book, a map and ten A4 worksheets containing 200 questions.

4Mation can be contacted on (0271) 25353.

... 32-bit Acorn home computers ...... Commodore Amiga ...... IBM PC /compatibles ...



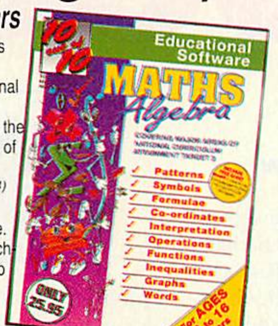
The *10 out of 10* Series

Rapidly becoming Britain's favourite choice in educational software



Maths (Algebra)

For children 6 to 16 years

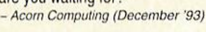


"*10 out of 10* Maths (Algebra) meets all the criteria for an outstanding educational program and fully deserves first place as the Edutainment Program of the year. Ten out of Ten for it!"

THE BEST EDUCATIONAL GAME of 1993

– Amiga User International (January '94)

"This pack is very good. It is well suited to both home and school use. It encourages good skills, like searching for patterns and estimating. Also it's available on approval, so what are you waiting for?"



– Acorn Computing (December '93)

Junior Essentials

For children 5 to 11 years



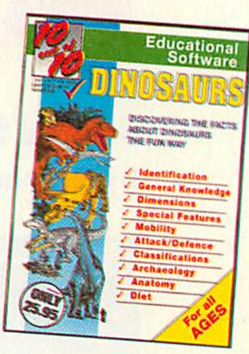
A truly flexible package covering many topics essential for building a good educational foundation. The areas covered have been carefully chosen by a team of experts and come from several subjects and levels of the National Curriculum.

The child's progress in these areas is constantly monitored and recorded and parents or teachers can easily discover where a child needs help.

As with all the *10 out of 10* series, further motivation to play the games and learn more is added in the form of High Score Tables.

Dinosaurs

For all ages



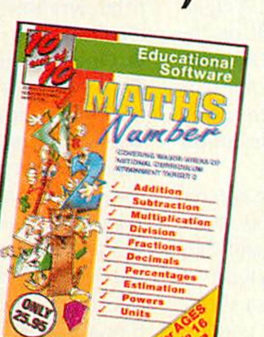
This package is the fun way to learn the facts about dinosaurs. The six games all have superb digitised graphics to make a whole area of history – dinosaurs – come alive.

If you came face to face with a tyrannosaurus would you run away? Or are you safe because it's a vegetarian and wouldn't eat you? This, together with 100s of other interesting facts, can be discovered from this enthralling package.

The six games – all with single and multi-player options – are educational fun for everyone.

Maths (Number)

For children 6 to 16 years



"Well thought out to offer real benefits to children studying in British schools."
– PC Plus (July '93)

"Educationally worthwhile and exciting to play – a rare combination."
– Archimedes World (December '92).

"Unique in home-based programs because of the National Curriculum link."
– The Micro User (September '92)

"Excellent for reinforcing specific mathematics knowledge."
– Junior Education (July '93)

"The *10 out of 10* Series lives up to its name." *– PC Home (August '93)*

Early Essentials

For children under 7 years



"Outstanding. All of the activities are not only very enjoyable but they're well thought through. It's one of the best multi-purpose infant packages I've seen in a long while. If you have young kids get it for the home. If you're a teacher, hammer on the headteacher's door and beg for money to buy a copy."
– Archimedes World (July '93)

"At just £2595 you'll be hard pressed to find anything which even comes close to Early Essentials."
– Micro Computer Mart (Sept. '93)

English

For children 6 to 16 years



"Everything being done is relevant to the player's education. An invaluable curriculum experience, plenty of fun, lots of variety."
– PC Home (November '93)

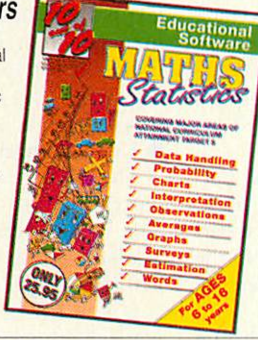
"Guaranteed to sustain the attention of even reluctant learners."
– RISC User (January/February '93)

"Most importantly, as the games are fun, children can't help but learn."
– Acorn Computing (March '93)

"Allows progression from Junior school age right up to GCSE level."
– Amiga User International (Sept. '93)

Maths (Statistics)¤

For children 6 to 16 years



Attainment Target 5 of the National Curriculum is Data Handling – a vital area of Mathematics. *10 out of 10* Maths (Statistics) covers 36 specific topics from that subject.

In this package, recording animal sightings in an animated pond or rolling dice are just two of the many challenges that children will relish as they learn about statistics. And can graph drawing be a game? It becomes arcade action as bricks and bombs are dropped onto the charts. This is a really enjoyable way to learn about statistics.

French¤

For children 6 to 16 years



This suite of six educational games will give fun and motivation to all children learning French. The package is designed with the Modern Languages National Curriculum firmly in mind and contains many challenges to reinforce facts stated in Attainment Targets 3 and 4.

10 out of 10 French is essential for children on Key stages 3 and 4, but the numerous parent and teacher customisation options make the software suitable for all children – however young – who are learning the French language.

Driving Test¤

For all drivers and learners



Whether you're a novice learner or an advanced expert, there's plenty you can learn from this package. There are thousands of built-in questions and you can choose whether you want to answer them directly or add to the fun by trying them within games.

The six games have been designed to be fun for all adults and include strategy, mental agility, coordination and more. And, if you think you are up to it, you can "*take the test*" – a challenge covering many areas of the Driving Test.

The INNOVATIVE *10 out of 10* Series

These highly acclaimed suites of programs are a revolutionary step forward in educational software. They ALL use a unique system of automatically recording children's progress as they play and learn. This is just one of the many features which sets the 10 out of 10 Series in a class of its own.

Already used in over 6000 schools

Each package contains **SIX** expertly designed educational games **covering TEN essential areas** of a child's education. All packages cover a **wide age range** and subjects are available for all children from three to sixteen years of age.

As children learn from the games their progress is **automatically recorded in 36 specific challenges** – the National Curriculum Attainment Targets of these areas are optionally displayed on screen in subject-based packages. All the programs are **designed in Britain** to be **fun for single players or groups** and the assessment system can monitor the progress of up to 4000 children with **no input from parent or teacher** needed. Watch them, join in the fun or leave them and return later to check their progress. **You're in control!**

A CHANCE TO EARN MONEY

You can EARN MONEY by recommending *10 out of 10* – over £5 for every order you generate. Ring 0742 780370 and ask about the *10 out of 10* Agency scheme now!

Phone 0742 780370 for a FREE TRIAL!

We are so confident you'll like *10 out of 10* software that we'll let you try it FREE. Ask for a free trial* and we will not bank any payment until you've had chance to test the programs yourself.

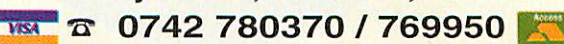
DEMONSTRATION VERSIONS are also available – each subject is on a separate disk. They cost £1 each. This will be refunded when you order the full version.

HOW TO ORDER ...

The 10 out of 10 Series is available for Acorn 32-bit computers (Archimedes), Commodore Amiga and IBM/PC and compatibles. At the time of going to press, titles marked ¤ were not available on all formats. Please ring for availability. Each package is ONLY £25.95 and you can order by CREDIT CARD, CHEQUE or EDUCATION AUTHORITY ORDER.

If you ask for a free trial* we will send you the software without processing the payment. If you do not wish to keep the package, return it to us within 14 days and we will return your ORIGINAL cheque or order or not process your credit card for payment.

Order by Post or Phone from:
***10 out of 10* Educational Systems**
1 Percy Street, Sheffield, S3 8AU



Site and Network Licences are available – please ring for details.

* The free trial may not be used in conjunction with any other offer.



Adventure

By Graham Nelson



To tie in with this month's feature on Adventure games we have an interpreter for games with the Infocom format, along with two games: *Curses* and *Advent*.

Advent is a version of the first ever Adventure game, otherwise known as Colossal Cave.

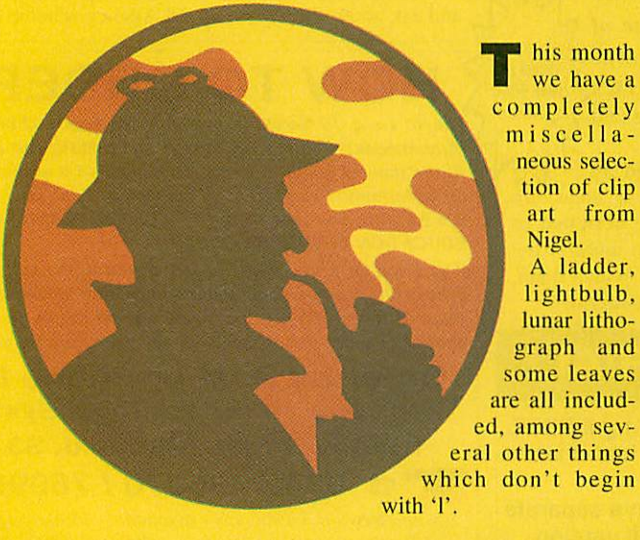
Curses is an original game which has been played before on many other computer systems. The *Zip* interpreter will run all Infocom format games of types one to five. These are available for other machines, including the IBM PC.

Game files may be copied to the Archimedes, given the correct filetype – &061 to &065 – and run by *Zip*.

To run a game file, double-click on it. *Zip* must first have been seen by the Filer. For more information see the Welcome to Adventure article on page 76.

Nigel Gatherer's clip art column

By Nigel Gatherer



This month we have a completely miscellaneous selection of clip art from Nigel.

A ladder, lightbulb, lunar lithograph and some leaves are all included, among several other things which don't begin with 'l'.

Tiger

By Graham Crow



Tiger is a program designed to overcome the ten-character limit imposed on Risc OS filenames. It allows a file to be set up containing information about all the files in a directory.

To run *Tiger*, double-click on the application icon. A tiger-striped icon will install on the right of the icon bar. Dragging a file or a directory to the icon will cause *Tiger* to open a window showing all the files in the same directory.

A description may be entered in the writable icon next to the file or directory entry and may be up to 110 characters long.

Double-clicking on a directory entry in the *Tiger* window will open a window showing the contents of that directory.

When you have entered all the descriptions, save the data out to a file in the directory which you have just catalogued. Double-clicking on this file will load the definitions back into *Tiger*.

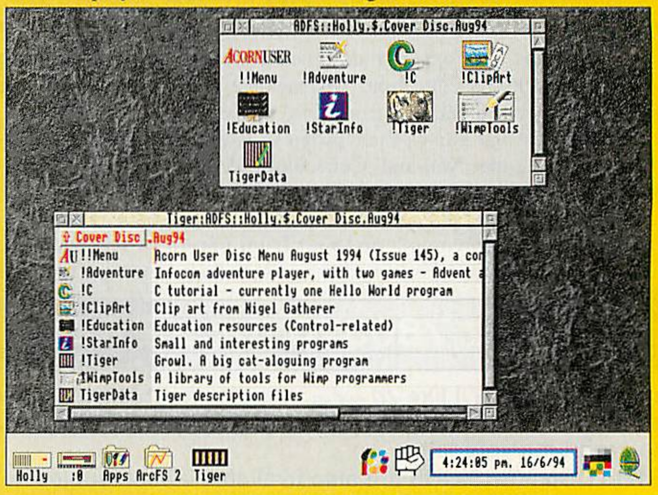
Clicking with the Menu button over the *Tiger* window brings up a menu, the first part of which is very similar to the Filer menu. The only difference is the display options – with *Tiger*, you get a choice between: 'Descriptions' which shows the *Tiger* descriptions, 'Object info' which gives a display similar to the Filer 'Full info' display, and 'Nested size' which shows the size of all files and directories.

The other options are:

- **Open filer**: This opens a Filer window for the current directory.
- **Open parent**: This opens a *Tiger* window for the current directory's parent window.
- **Save data**: This saves the information for the current directory as a file called *TigerData* in the directory.
- **Save text**: This saves a text file with information about all the files in the directory. Exactly what is saved is configurable from the Save dialogue box.
- **Open buffer**: This opens a text buffer, allowing text to be imported from an editor. This is useful for importing lines from *Help* files without having to type them in.
- **Undo changes**: Guess.

The 'Save text' and 'Open buffer' options are not available in this version of *Tiger*. The full version is available for £10 from Graham Crow.

If you use *Tiger* regularly you should obtain this version and become a registered user. Graham Crow's address is in the *Help* file within the application, along with a registration form.

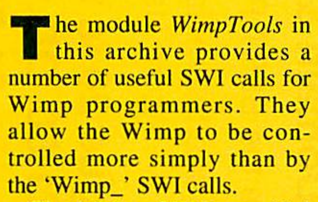


COVER DISC

Wimp Tools

By Matt Lewis





The module *WimpTools* in this archive provides a number of useful SWI calls for Wimp programmers. They allow the Wimp to be controlled more simply than by the 'Wimp_' SWI calls.

The full list of SWIs provided is in the *!Help* file in the *WimpTools* application. Also within this application are the *WimpTools* module itself, the *WmpLib_Code* source code for the module, and a file *CWimpTools* which contains a header file to enable *WimpTools* to be used with C programs.

Running the *WimpTools* application sets up a path so that other programs can 'find' the *WimpTools* module.

The *Demo* program demonstrates the use of the library. Shift-double-click on the application to open it, and load the *!RunImage* program into a text editor.

Note that, for the program to run, the *WimpTools* module must be loaded – the *!Run* file ensures that it is.

By copying the structure of the program, you should be able to create your own Wimp applications relatively easily.

Credit where it's due

The *Lonely Nights* music that came with the *QTM* program on the June 1994 disc was written by Stuart Malcolm.

The *Tiles* game on the May 1994 cover disc was written by Steve Gutteridge, and not Mark Smith as we incorrectly stated on these pages. I would like to thank whoever phoned up to suggest a small change to the *Menu* program, which we have implemented.

The operation of the program has not changed, but the icon labelled 'Run' has been replaced with one labelled 'View', which is a better description of what it does.

*INFO



Yet more offerings from Daves Acton and Dave Lawrence.

Among other delights this month, we have a minesweep program, a geography quiz and an animated stereogram.

This month's *INFO is guaranteed free from all fractal programs. This offer may never be repeated.

Actually, there is one Mandelbrot set: we hate to break with tradition.

Education resources

By Geoff Preston, Colin Rouse and John Woollard



The directory *!Solve* contains a *PrimeSolver* file, along with a worksheet in *Style* format which can be printed out and used as a problem sheet.

The *Draw* files within the document may be used in your own problem sheets.

The *Control* directory contains a number of files in Logo, *Sparkle* and *Coco* formats. For more information, see the article on page 45.

The *YearPlan* directory has a *Draw* file with a year planner ready for the start of the academic year beginning September 1994.

Holidays are not marked on the planner because, for reasons known best to themselves, different local authorities have holidays at different times.

This can be printed out, or loaded into *Draw* and amended as suggested in the *ReadMe* file.

Send us your software!

At *Acorn User* we are very keen to publish reader's programs on the cover disc. Under the unique *Acorn User* PD scheme, you retain copyright of your programs at all times, leaving you free to develop your ideas further or release your software into the Public Domain.

The only condition is that you must not publish the software anywhere else for three months after it appears on the cover disc. After this period you can do what you want – and of course we'll pay you for letting us publish your work, so you can't lose.

If you want to send us any programs, please send a disc and a covering letter to: Acorn User Cover Disc, Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP. If possible, instructions for using the programs should be on a text file on the disc, and please enclose a SAE for swift turnaround.

We have recently received a large number of high-quality submissions from readers. Therefore, even if we like your program we may not be able to put it on the disc immediately.

We look forward to hearing from you.

Disc problems?

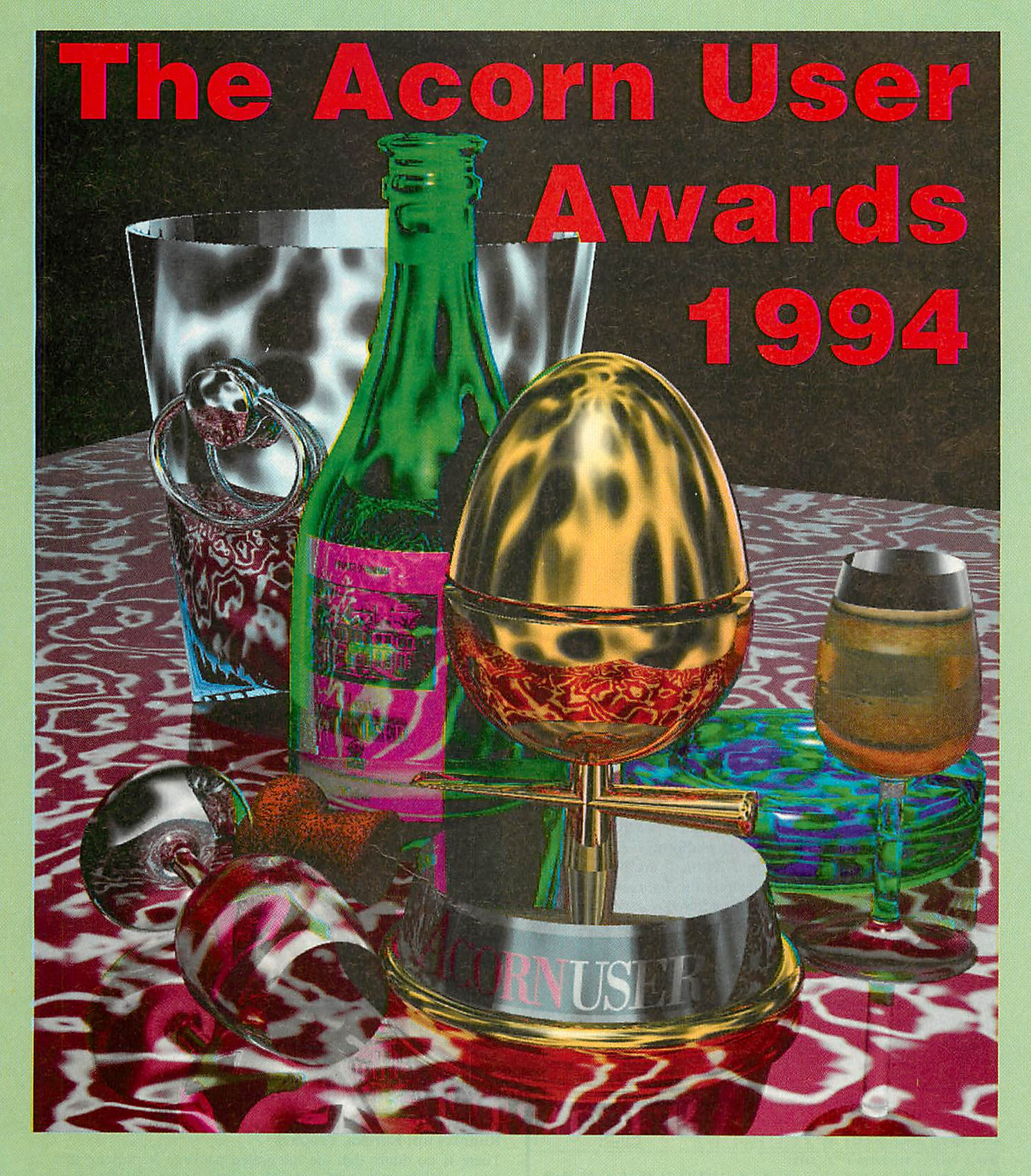
Our cover discs are thoroughly tested at each stage of production, but one or two faulty discs may slip through. If you suspect that your drive is faulty, do the following to check it:

1. Put the disc in your drive.
2. Click Menu (the middle mouse button) over your floppy disc drive icon, on the left of the icon bar.
3. Click on the Verify option, and a window will pop up showing the verification process.

If verification finishes with no errors – the window says 'Disc verified' – then your disc is not physically faulty and you should contact the editorial office at the address given on the contents page. However, if an error is reported, your disc is faulty and it will be replaced free of charge. Send it with your name and address to: PC Wise Ltd, Dowlais Top Business Park, Dowlais, Merthr Tydfil, Mid Glamorgan CF48 2YY

Most of the programs on the *Acorn User* cover disc are compatible with both Risc OS 2 and Risc OS 3. However, the discs are only tested on the new system, and we cannot guarantee that everything will work with the old system.

Our advice is to upgrade as soon as possible, as compatibility problems will occur more often as software developers make use of the new operating system.



Welcome to the *Acorn User* Awards for 1994. On the next five pages you will find the best of the best in 20 different categories, as voted by you, the readers. The results make interesting reading: a big thank you to all of you who voted. Roll the drums, dim the lights, and on with the awards...

Best Bitmap Graphics Software

Winner: ProArtisan 2
Runners up: Revelation 2, PhotoDesk

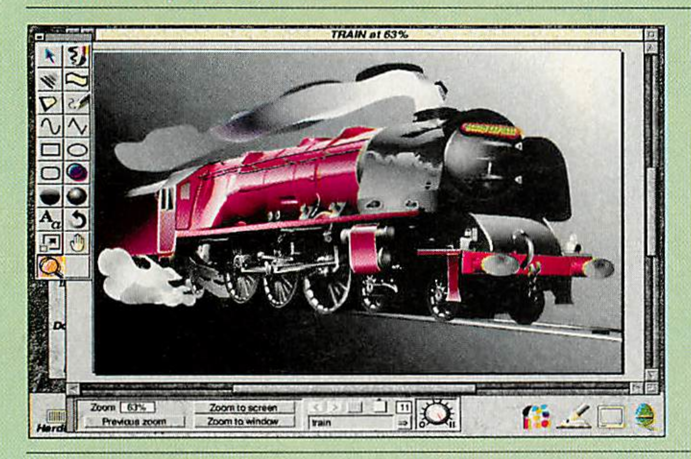
There was no doubt in your minds which bitmap graphics package is the best: *ProArtisan 2*. The combination of powerful image processing tools and comprehensive drawing tools enables sophisticated graphics to be created, and the *ProArtisan 2CD* is specially tailored to loading and touching up Photo CD images. The 24-bit version, *ProArt 24*, is also on its way.

Revelation 2 also proved popular, though its lack of 24-bit capabilities means it is a runner up rather than an outright winner.

Spacetech's new *PhotoDesk* also gets a runner up prize: when the Risc PC is more established we could well see *PhotoDesk* walk off with the prize.

ProArtisan 2: Clares, (0606) 48511
Revelation 2: Longman Logotron, (0223) 425558
PhotoDesk: Spacetech, (0305) 822753





Best Vector Graphics Software

Winner: ArtWorks
Runners up: Vector, Draw

This category is a bit of a foregone conclusion. Since its launch back in 1992, *ArtWorks* has been the premier vector graphics package on the Acorn platform. Since then there have been no real contenders in this area, though *ArtWorks* itself hasn't stood still. Version 1.5 is now shipping and has a large number of new features, and *ArtWorks* is also available on CD-Rom.

Vector, the runner up, was born from the Public Domain program *DrawPlus*. Substantially improved over *DrawPlus*, *Vector* is an excellent upgrade from Acorn's own *Draw*.

ArtWorks: Computer Concepts, (0442) 63933
Vector: 4Mation, (0271) 25353
Draw: Comes with Risc OS

Best DTP/Wordprocessor

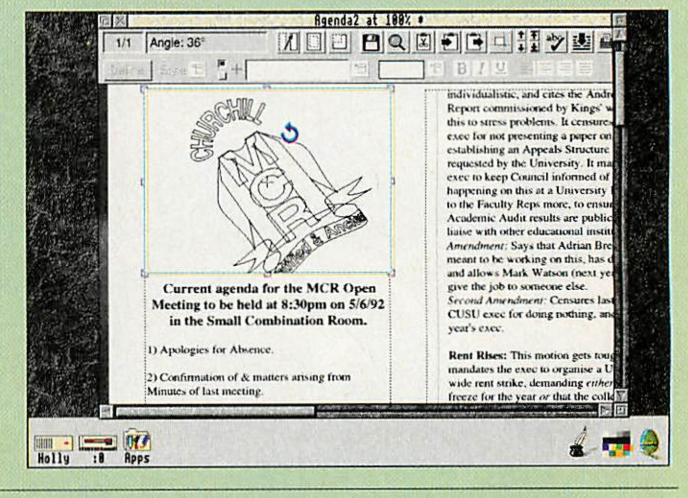
Winner: Impression Style/Impression Publisher
Runners up: EasiWriter, Wordz

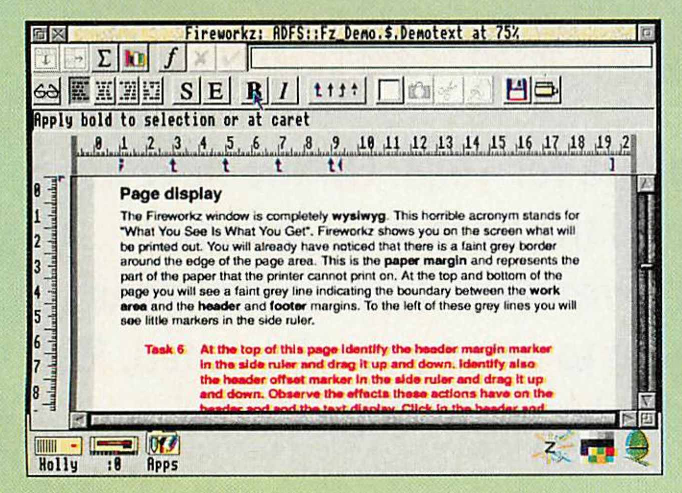
When it comes to serious DTP packages, there is only one real contender: *Impression*. The new range, which consists of *Impression Style* and *Impression Publisher* provides the most sophisticated layout tools on the Acorn platform.

The runners up – *EasiWriter* and *Wordz* – are both excellent word processors, and arguably outshine the *Impression* range in terms of the word processing features offered. *EasiWriter* can be upgraded to become a talking word processor and a cut-down version, *StartWrite* is also available.

Wordz is the word processing part of *Fireworkz*, winner of the Best Business Software award.

Impression: Computer Concepts, (0442) 63933
EasiWriter: Icon Technology, (0533) 546225
Wordz: Colton Software, (0223) 311881





Best Business Software

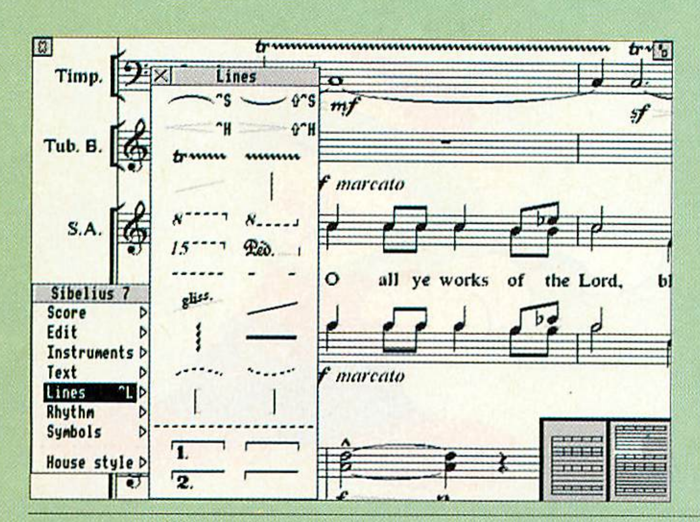
Winner: FireWorkz
Runners up: Eureka, Prophet

There is no doubt that the integrated package is proving to be a very popular product. Microsoft's largest earner isn't Windows or DOS: it's *Microsoft Office*, by a long way. *Fireworkz* is the Acorn equivalent, and combines the *Resultz* spreadsheet with the *Wordz* word processor, integrating the two seamlessly. Colton has always produced integrated packages, and *Fireworkz* is the best one yet.

Longman Logotron's runner up *Eureka* is a powerful spreadsheet, and is the spreadsheet we use internally at *Acorn User*.

The other runner up, Apricote's accounting suite *Prophet*, is also a popular package, with more features than most of us would use in a lifetime.

FireWorkz: Colton Software, (0223) 311881
Eureka: Longman Logotron, (0223) 425558
Prophet: Apricote Studios, (0354) 680432



Best Music Software

Winner: Sibelius 7

Runners up: Digital Symphony, Rhapsody 3

When we reviewed *Sibelius 7* back in February we called it 'the most impressive program of any kind' we had ever seen; it has revolutionised the task of creating music manuscripts. *Sibelius* knows all the rules of music typesetting and dynamically formats the music as you enter it, and the speed at which the program works is astounding even to those who are used to fast Acorn computers, but those who are used to PCs and Macs are buying Acorn systems specifically to use *Sibelius*. A worthy winner.

Digital Symphony from Oregan is an excellent soundtracker sequencer, while *Rhapsody 3* successfully combines musical layout flexibility with playback.

Sibelius 7: Sibelius Software, (0223) 302765
Digital Symphony: Oregan, 021-353 6044
Rhapsody 3: Clares, (0606) 48511

Best Communications Software

Winner: Hearsay II

Runners up: ArcTerm 7, ArcFax

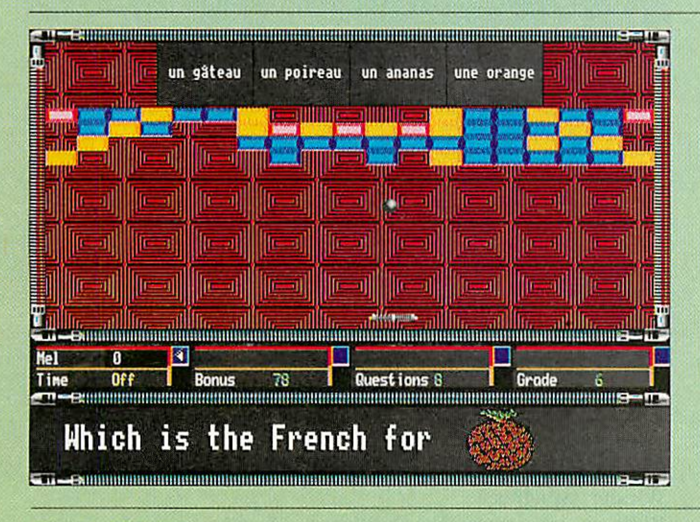
Communications software is very complicated and comms contains a serious amount of jargon. As a result you need to be familiar with the comms program you use.

Although it was a close run thing, *Hearsay II* is your choice for the best comms package, with its support of all the most popular file transfer protocols, a logical menu structure and a clear, easy-to-use display. Coming a close second is *ArcTerm 7*, which has a similar features list and is just as powerful as our winner.

The second runner up, *ArcFax*, is as innovative as it is useful: it enables you to treat a fax modem as a printer to send faxes.

Hearsay II: Risc Developments, (0727) 843600
ArcTerm 7: The Serial Port, (0749) 670058
ArcFax: David Pilling, PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR





Best Educational Software

Winner: 10 out of 10 series

Runners up: Granny's Garden, Talking Stories

Perhaps it is the sheer range of the *10 out of 10* series that has made it the winner in this category, or perhaps it is that every *10 out of 10* package contains six educational games: enjoying yourself is the key to learning more, and to making children want to play with the software.

No educational software award would be complete without mentioning 4Mation and Sherston, who both bring out packages of the highest standard. *Granny's Garden* and *Talking Stories* are excellent examples of what educational software should be: informative, beautifully presented, easy to use and a pleasure to run. Probably the best argument for buying Acorns in school.

10 out of 10 series: 10 out of 10 Software, (0742) 780370
Granny's Garden: 4Mation, (0271) 25353
Talking Stories: Sherston Software, (0666) 840433

Best CD-Rom

Winner: ArtWorks CD

Runners up: Hutchinson Encyclopedia, Creepy Crawlies

Although the CD-Rom market is beginning to improve seriously on the Acorn platform it is interesting that both the runners up are over a year old, and that the winner isn't a multimedia disc.

The *ArtWorks* CD contains the entire *ArtWorks* package, plus the best entries from the 1993 *ArtWorks* competition, plus some 24-bit photographs and a demonstration version of *AudioWorks*.

Creepy Crawlies and *Hutchinson's Encyclopedia* are excellent examples of their genre, and as multimedia gets all the more impressive, they're just the start of the CD revolution.

ArtWorks CD: Computer Concepts, (0442) 63933
Hutchinson Encyclopedia: Attica Cybernetics, (0865) 791346
Creepy Crawlies: Media Design Interactive, (0252) 714340



Best Game

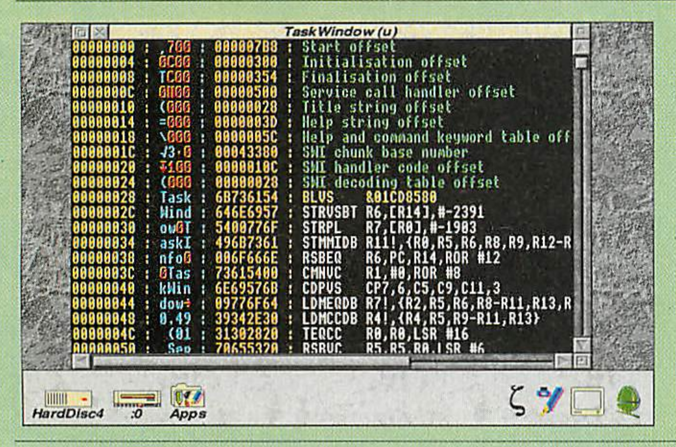
Winner: Lemmings 2
Runners up: Stunt Racer 2000, The Crystal Maze

If you've ever seen someone playing *Lemmings 2*, you'll know the chances of butting in and having a conversation are pretty slim. And if they're anything like the addicts I've met, the situation won't improve for months after they've started the game.

Addictive isn't the word – if videos have to contain warnings, *Lemmings* should at least have a sanity warning sticker attached. It's a masterpiece.

The runners up are excellent examples of native Acorn games – neither of them are conversions from other platforms. *Stunt Racer 2000* is such a *playable* game, and *The Crystal Maze* has been a hit since day one – and it's only available on the Acorn.

Lemmings 2: Krisalis, (0709) 372290
Stunt Racer 2000: 4th Dimension, (0742) 700661
The Crystal Maze: Sherston Software, (0666) 840433



Best Public Domain Software

Winner: Zap
Runners up: Translator, Process

Public Domain software on the Acorn has always been prolific but the quality of software available has really risen over the last couple of years. These three applications are perfect examples of what good PD and Shareware software should be about: comprehensive documentation; rapid and comprehensive response to reported bugs and suggested features; and specifications aimed exactly at the people who want to use the software.

Zap is also the winner of the Best Programming Tool, and *Translator* and *Process* have always been popular.

Zap by Dominic Symes
Translator by John Kortink
Process by Henrik Bjerregaard Pedersen

Best Programming Tool

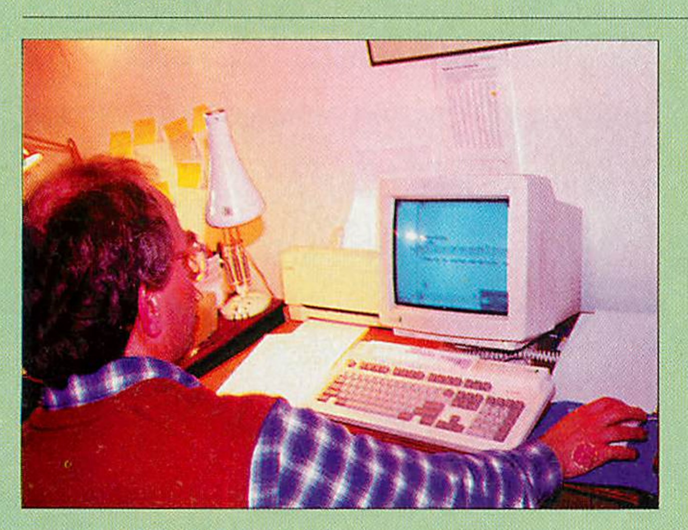
Winner: Zap
Runners up: Easy C, StrongEd III

Programming tools are used by those who know how to use their systems to the full, so it's no surprise that *Zap* is the winner in this category. This excellent PD program editor is a hacker's paradise, with more features and flexibility than most commercial editors.

Features such as context-sensitive colouring of programs and a very fast redraw speed make this the first choice with programmers. And, of course, it's free.

Easy C is a worthy runner up. A complete C package, including a Wimp library, for just £60 has to be a bargain, and is an excellent introduction the language. *StrongEd III* also has a large following: interestingly it used to be PD, just as *Zap* still is.

Zap by Dominic Symes: PD Libraries
Easy C: Risc Developments, (0727) 843600
StrongEd III: Stallion Software, (0225) 339090



Most Innovative Software

Winner: Sibelius 7
Runners up: Impression Publisher, Morpheus

Innovative software needs to have something which has never been seen before, and there's no doubt that *Sibelius* satisfies that condition. *Sibelius* is better than anything seen on any other platform, and has revolutionised the process of putting music onto paper.

Although we've seen DTP packages on other platforms for a long time, *Publisher* is something of a rarity: a DTP package which can be used just as comprehensively as a word processor, something which cannot be said about *Quark*.

Morpheus is definitely innovative: morphing is the hippest graphical effect around, and *Morpheus*' implementation is excellent.

Sibelius 7: Sibelius Software, (0223) 302765
Impression Publisher: Computer Concepts, (0442) 63933
Morpheus: Oregan, 021-353 6044



Best Printer

Winner: Canon BJC-600
Runners up: Calligraph A4-1200, HP 550C
The Canon BJC-600 is a phenomenal printer. Not so long ago, colour printing was either pretty low quality or very expensive, but the BJC-600, and the runner up Hewlett-Packard HP550C, have brought the cost down and the quality up.

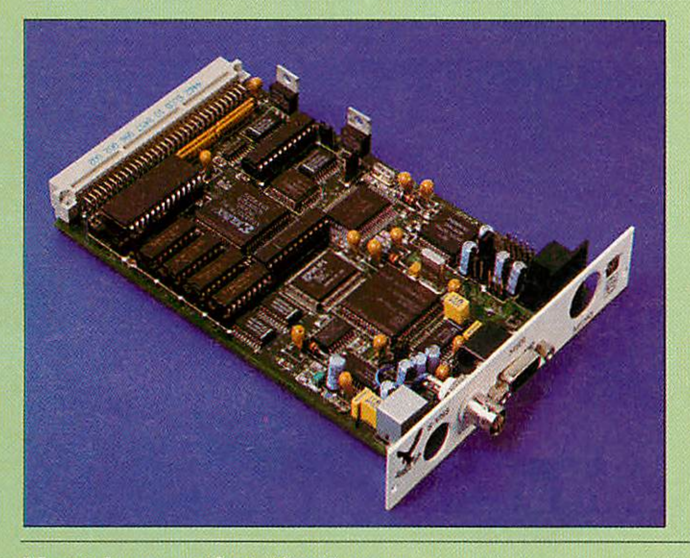
Credit must be given in this category to Computer Concepts, whose bundled *TurboDrivers* speed up the process of printing immensely with its LaserDirect-based technology.

A similar technique is also used with Calligraph's excellent A4-1200, which deserves its runner up award for providing a crisp 1200dpi laser printing system at a very low price: the highest definition printer available for the Acorn range, for under £1000.
Canon BJC-600: Canon UK, (0800) 252223
Calligraph A4-1200: Calligraph, (0223) 461143
HP 550C: Hewlett-Packard, (0344) 369222

Best Monitor

Winner: Acorn AKF85
Runners up: Eizo T560i, Taxan 795
A few months ago, the thought of giving an award for any Acorn monitors would have been laughable, but the fact that you've voted for the AKF85 just goes to prove that Acorn has got its act together with its new bundled monitor. The top-of-the-range AKF85 is a 17in multisync, and is in fact a badged Philips Brilliance series monitor with a crisp 0.27mm dot pitch.

Both Eizo and the Taxan monitors have proved popular with Acorn users for some time, and it's an indication of the quality of the Taxan 795 that it is still in the awards, even though it was released back in 1990. It goes to show that quality lasts.
Acorn AKF85: Acorn Computers, (0223) 254254
Eizo T560i: Eizo, (0483) 757118
Taxan 795: Taxan, (0344) 484646



Best Expansion Card

Winner: Eagle M2
Runners up: ColourCard Gold, Ultimate Expansion system
With the enormous variety of expansion cards available, the winner of this award needs to be very special indeed. And the Eagle M2 certainly is: cramming a Replay movie system, a colour digitiser, a sound sampler and a MIDI port onto just one card.

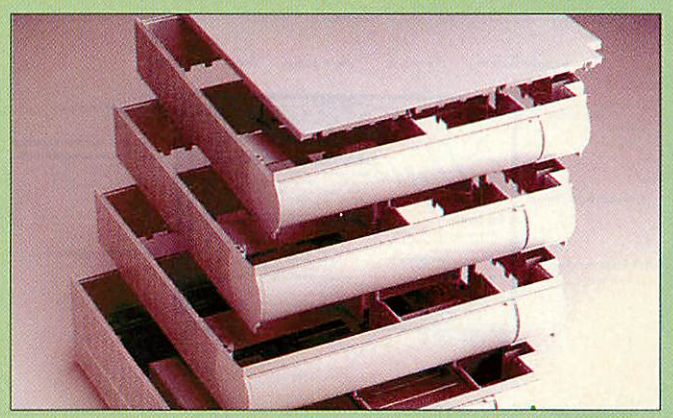
The runner up, ColourCard Gold, enables owners of pre-Risc PC machines to access 15-bit-per-pixel desktops, which proves that Acorn users are always looking for better graphical systems – the Risc PC should now satisfy those hungry for serious graphical displays.

Finally, the Ultimate Expansion System is a well-conceived solution to the problem of expanding your computer, and quite rightly gets a mention in the Most Innovative Hardware category as well.
Eagle M2: Computer Concepts, (0442) 63933
ColourCard Gold: Computer Concepts, (0442) 63933
Ultimate Expansion system: HCCS, 091-487 0760

Most Innovative Hardware

Winner: Risc PC
Runners up: Ultimate Expansion system, Eagle M2
Acorn's excellent new Risc PC system is the outright winner of this category. With its very flexible modular design, co-processor slot, large memory capability, 24-bit graphics display and future-proofed hardware, the Risc PC is the future of the Acorn market, and deserves to do phenomenally well.

The runners up are also both mentioned in the Best Expansion Card category, which indicates that a successful expansion card is also innovative.
Risc PC: Acorn Computers, (0223) 254254
Ultimate Expansion system: HCCS, 091-487 0760
Eagle M2: Computer Concepts, (0442) 63933



Best Book

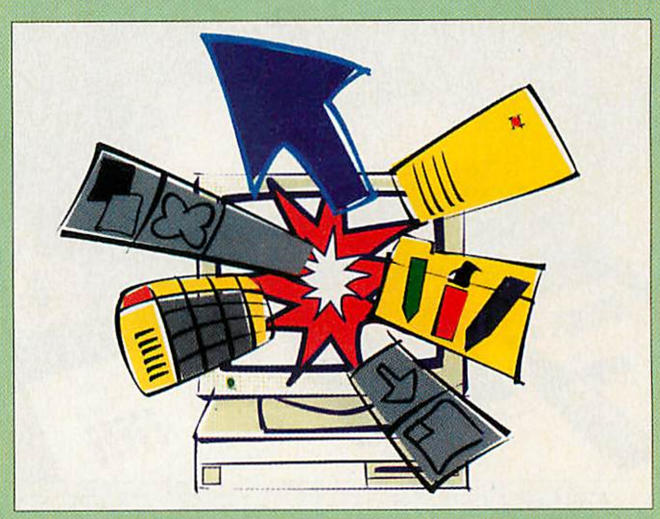
Winner: Risc OS First Steps
Runners up: Basic Wimp programming on the Acorn, Artworks Made Easy

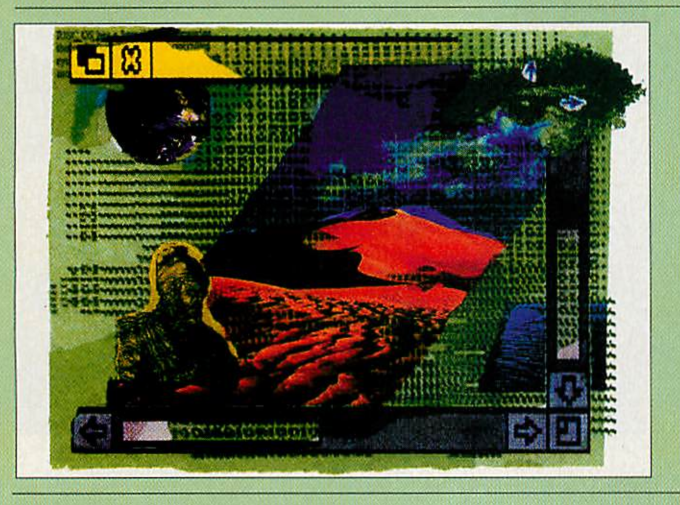
Hats off to Dabs Press, who continues to dominate the Acorn book market. All three winners of this category are from this one company, and it's interesting that two of the titles – *Risc OS First Steps* by Anne Rooney and *ArtWorks Made Easy* by Roger Amos – are aimed at those who need more help than manuals provide.

Although the manuals for the Arc and *ArtWorks* are excellent – *ArtWorks'* manual did well in the Best Manual category – there is a serious need for more basic literature to help those struggling. Well done, Dabs, for providing just that.

The third book, *Basic Wimp programming on the Acorn* by Alan Senior, is more technical, but is still clear and informative.

Risc OS First Steps: Dabs Press, 061-773 8632
Basic Wimp Programming on the Acorn: Dabs Press
Artworks Made Easy: Dabs Press





Best Manual

Winner: Risc OS 3 PRMs
Runners up: Impression Style, Sibelius 7

Manuals are sometimes just as important to the success of a package as the package itself: if you can't fathom the manual, how can you fathom the product? It's interesting then, that the most complex manual of them all – *The Programmer's Reference Manual* – should win this category. However, it's not surprising: the PRM is the bible when it comes to using Acorn computers.

Style's manual is also a clear and informative tome, and the manual for *Sibelius* is a case study for clear wording and clarity. Perhaps this is another reason why these packages have also won awards in their own subject categories too.

Manual authors, take heed.

Risc OS 3 PRMs: Acorn, (0223) 254254
Impression Style: Computer Concepts, (0442) 63933
Sibelius 7: Sibelius Software, (0223) 302765

Best Article/Series

Winner: The Risc PC (May 1994)
Runners up: The Moxon Interview, *INFO

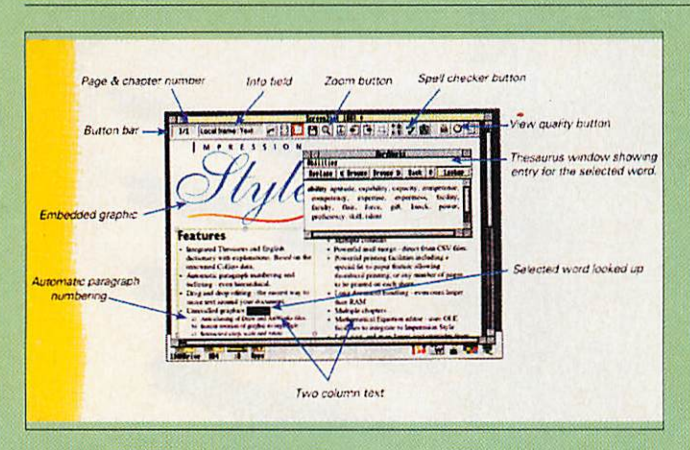
It's sometimes surprising when certain articles prove to be extremely popular, but there's no surprise when it comes to our Risc PC coverage in the May issue. It's a testament to the expert authors we commissioned to cover the machine: how else can you expect to do justice to such an important event in Acorn's history?

The Moxon Interview is also very popular, which only goes to show that the human aspect of the Acorn scene is important to our readers. It's been imitated, but not bettered.

Finally, *INFO has always been one of the most popular areas of the magazine, thanks to the two Daves and their sterling work in the column.

And a thank you to you, our contributors: *INFO wouldn't exist without your input, so keep up the good work and send us your programs, big or small.





Best Advertisement

Winner: 'Impression Style', Computer Concepts
Runners up: 'World of Multimedia', Wild Vision
Gothic fonts and clip art, The Datafile

Computer Concept's *Style* advert is the clear winner in this category, projecting a professional image, and sending a clear message to the reader about the product.

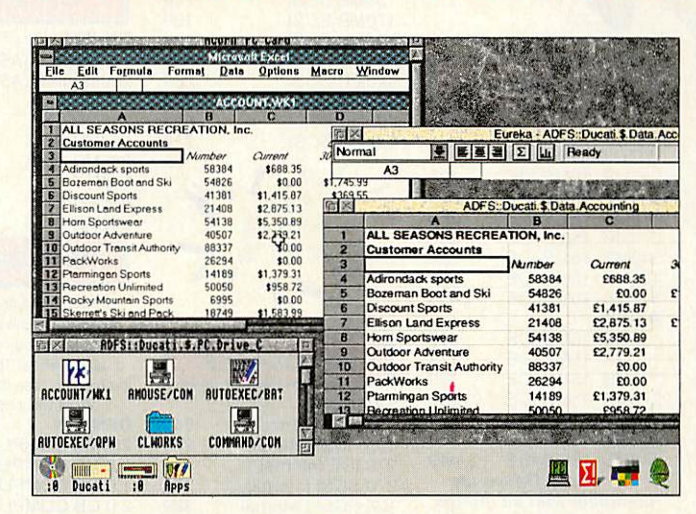
The Wild Vision advert is a total contrast, eye-catching certainly, but leaving the reader to work to find which products it is advertising. This type of advert is clearly popular, although its position on the inside front cover spread probably did it no harm.

The Datafile's vibrant and colourful advert shows what can be achieved 'in house'. Very popular with readers for its clarity, the advert was produced using *Artworks* and the Datafile's own fonts.

The Datafile, (0934) 823005

Acorn User reader offer

Why not have two computers in one and enjoy the best of both worlds? With Acorn's PC Card, you can run Windows and DOS-based software in a window on your Risc OS desktop



Using PC software on your Risc OS desktop

For a limited period only, Acorn is offering PC Cards at exceptionally low prices through *Acorn User* magazine.

PC 386 Card 1Mb (RRP £264.37) for £99

PC 486 Card 4Mb (RRP £499.37) for £199

Apart from the stunning price saving, why should you buy? Because...

- The Acorn PC Card gives you the best of both worlds with two machines in one at a low price: a PC which fits inside your Archimedes 32-bit Risc system (A3020, A4000 only).
- Now you can access 2500 software titles which run under the multi-tasking Risc Operating System, including the best curriculum software in the UK, as well as the range of windows plus DOS-based software for PC compatibles.
- Acorn's introductory PC 386 Card is ideal for users of a large number of text-based DOS applications, while the PC 486 Card also provides high performance for users of Microsoft Windows applications running on Acorn products.
- Acorn's solution allows the integration of 32-bit Risc with PC applications within the same easy-to-use window-based Risc OS environment, providing the flexibility to meet all your needs.

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PC Card Order Form

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☐ PC 386 Card(s) at £99 each

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Add £6 total for insured carriage.

- I wish to pay £ .... by...

☐ Cheque (payable to Vector Services Ltd)

☐ VISA/ACCESS Expiry date ☐/☐

Card no. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

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Name (Mr/Mrs/Miss/Ms) ....

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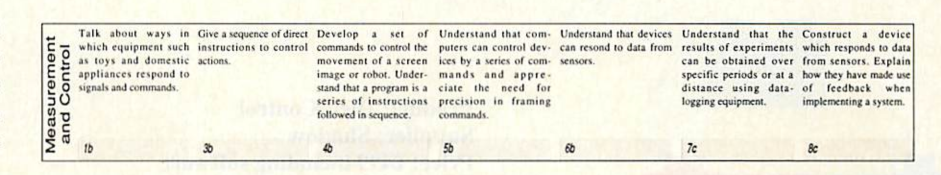
In command

Of the five strands of the National Curriculum Information Technology Capability, the one that appears to cause most problems for the Information Technology co-ordinator is Measurement and Control.

Due to the fact that many IT teachers do not have the necessary time, knowledge, understanding or confidence to play around with electronics, this strand of Information Technology Capability has tended to be, at best, brushed over and, at worst, totally ignored in the hope that it might go away.

Some IT co-ordinators have been heard to breathe a sigh of relief when the Technology Department has announced that it will cover Control. A similar reaction has also occurred when the Science department has adopted the Measurement element.

CARL FOX



Measurement and Control							
Talk about ways in which equipment such as toys and domestic appliances respond to signals and commands.	Give a sequence of direct instructions to control actions.	Develop a set of commands to control the movement of a screen image or robot. Understand that a program is a series of instructions followed in sequence.	Understand that computers can control devices by a series of commands and appreciate the need for precision in framing commands.	Understand that devices can resond to data from sensors.	Understand that the results of experiments can be obtained over specific periods or at a distance using data-logging equipment.	Construct a device which responds to data from sensors. Explain how they have made use of feedback when implementing a system.
1b	3b	4b	5b	6b	7c	8c

Geoff Preston examines Measurement and Control under the National Curriculum

Delivering IT

All IT should be delivered across as much of the curriculum as possible. Restricting Control to the Technology Block is almost as daft as confining word pro-cessors to the English department.

True, there are parts of Control that are best done in Technology, and Science is an obvious candidate to deal with Measurement. But it would be a shame if Measurement and Control were not introduced into other parts of the curriculum. One popular myth is that schools need rooms full of electronics to teach control. Not necessarily so.

Although additional hardware will be helpful, it's only when you come to Level 7 that I feel you really must have it, and then you can get away with a relatively small amount.

For statements 1b, 3b, 4b, and 5b there are simulations available which could satisfy the requirements. Even 6b and 7b could just about be delivered by simulation.

Complete Control by CSH (see page 44, Control Simulations) and *PrimeSolver* by Minerva (see review on page 51) are two excellent products which require no additional hardware, yet go a long way towards meeting much of the control element of the National Curriculum.

If you want to provide enough hardware and software for a whole class, then prepare to spend a lot of money. Even sets of ten (working on the basis of two or three students sharing) can work out very expensive.

Having said that, youngsters will want to see, and indeed should see real things moving rather than screen simulations. Using a computer to control a screen image is fine, but using it to steer a buggy or control a robot arm will still give kids a thrill.

More importantly it will be more real and hence more easily digested. There are several items that can be purchased quite cheaply which will enable the Control element of the National Curriculum to be delivered.

Commotion has a range of kits for computer control which would not be beyond the bounds of the average school budget. Parents could do a lot worse than picking something out of their catalogue for a birthday or Christmas present.

Lego

While on that subject, many children will have Lego. If they've got an Acorn computer they can control their Lego models with the addition of a Lego Control Pack which includes software written by 4Mation.

John Woollard has had a great deal of experience in the area of computer control and he has taken a close look on page 47 at what I call traditional control. By this I mean a control box and an assortment of input and output devices which are plugged in and controlled via a dedicated program.

Users of Acorn computers have a vast array of hardware and software available to deliver Measurement and Control – there must be something here for everyone. Most hardware connects to the computer via the serial (RS 232) port or user port.

All Archimedes come with a serial port except the A3000 which will need the serial port upgrade, available from Acorn dealers for about £19.

If you want to connect hardware via the user port, all Archimedes will need to have a user port podule fitted. These are available for all models from various sources, although Commotion offers a good one for £49.95. You must state which computer it is intended for.

For those who are really stuck, a good starting point might be Trevor Millum's aptly titled *Control for the Confused*.

Available from Resource, this book tells you everything you need to know to get some projects underway.

RRRRegu devi

CARL FOX

There is so much control hardware around, it's difficult to know where to start. I've left out more than I've included, so apologies to those I've missed, but here is a wide assortment.

The NC statements which could be addressed are listed for IT Measurement and Control only. Possible statements from other subjects and other IT statements are not listed.

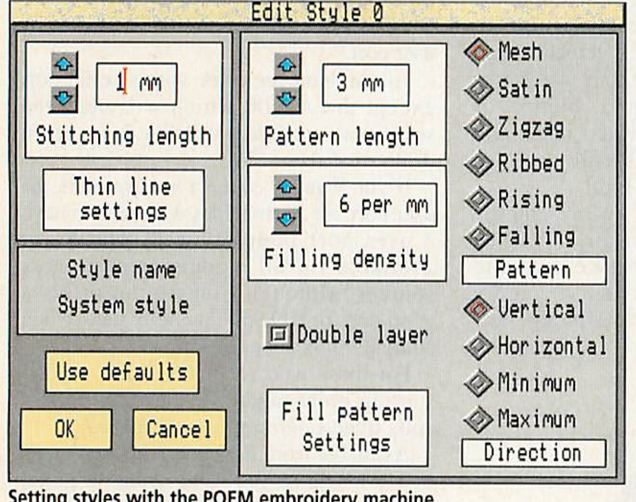
Product: Clown and Traffic Lights
Supplier: Commotion
Price: £19.95 and £24.95 respectively

Commotion is a name well known to CDT teachers as a supplier of good quality but low cost CDT equipment.

Both of these control items require connection to a control box and are driven by appropriate software.

Traffic light control is a well-worn topic, but the clown brings a new perspective to control. Both are supplied as a kit with simple assembly instructions.

The clown is a firm favourite with younger children, but needs to be kept out of reach as it won't take too much pulling around. CDT or IT are the best places to keep these to ensure they get the best possible use. The IT Capability (Control) statements which could be addressed: 1b, 3b, 4b and 5b.



Setting styles with the POEM embroidery machine

Product: Digit Control
Supplier: Shadow
Price: £499 including software

This is an artificial muscle powered by compressed air and controlled from the serial port. The muscle can be attached to a CDT project or used for science experiments.

This is a clever piece of kit with countless opportunities for delivering many NC attainment targets from several subjects, although CDT will be the home for most.

The IT Capability (Control) statements which could be addressed: 1b, 3b, 4b, 5b, 6b and 8c* (*with the addition of sensors).

Product: POEM Embroidery Machine
Supplier: Aisin
Price: from £699

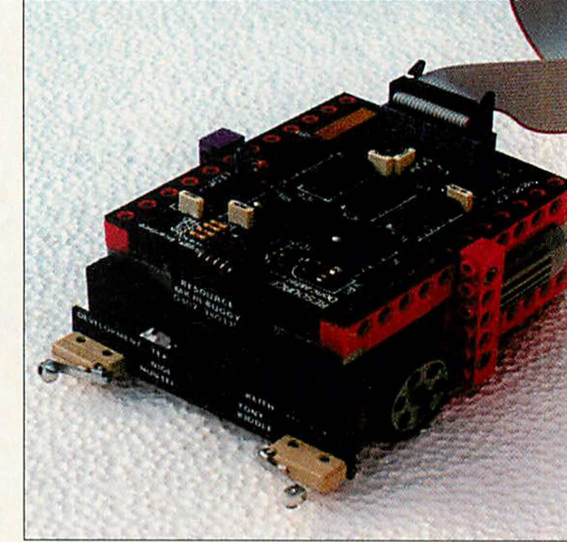
The POEM 500 Personal Embroidery Machine is, at present, the only sewing machine specifically designed for computer control and connects to the serial port.

Made by Aisin, it can be purchased through several retailers, usually with their own software. The two POEM control programs with which I am familiar are by Techsoft and Commotion.

Both of these programs demonstrate how much computer control has developed in recent times. They address a number of statements from several NC subjects, but it's a matter of debate as to whether either program really addresses any of the IT Control statements.

This, I feel, is a short-coming of the National Curriculum rather than the software. The IT National Curriculum doesn't seem to cater for a great deal of modern software, preferring to believe control is about wires, solder and writing control sequences.

POEM is no more difficult to use than a printer or plotter. It outputs a *Draw* file or sprite as an embroidered badge – and very nice it looks too. The IT Capability (Control) statements which could be addressed: 1b, 4b, 5b and 6b.


Resource's computer-controlled buggy

Product: Control Lab
Supplier: Lego Dacta
Price: £175-£3000

I can't believe there is anyone who hasn't already heard of Lego. Apart from the building bricks used at home, they also produce a more advanced version called Technic which can be computer controlled by adding Control Lab.

There are various kits available for both home and school, which address all of the control elements of the National Curriculum.

The kit is well thought out and Acorn users have the benefit of having the software written by 4Mation. For £3000 you get everything you need to cover all of the NC targets, including workcards and project ideas.

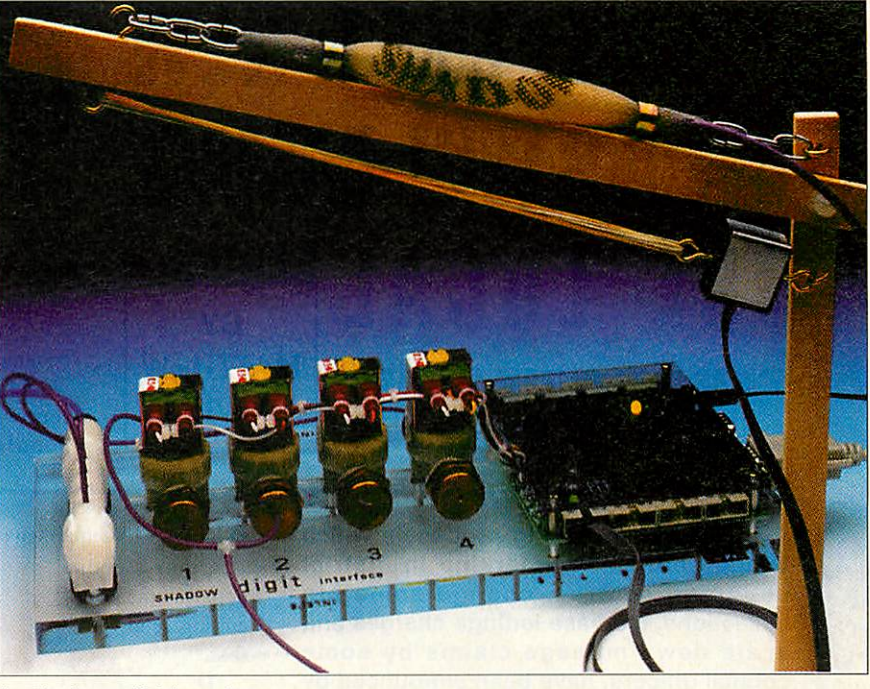
As a former CDT teacher, my only reservation is that it is not easy to keep track of all the bricks and cogs, even though the sets are packed in carefully designed trays which show which bits are missing. All the spare parts are available at reasonable prices, so replacement isn't too difficult or costly.

Oh, for the space and time to be able to

latory

ces

Geoff Preston looks at a selection of control hardware



The Shadow artificial muscle

build a Lego train set and use one of these packs to control it. The IT Capability (Control) statements which could be addressed: all.

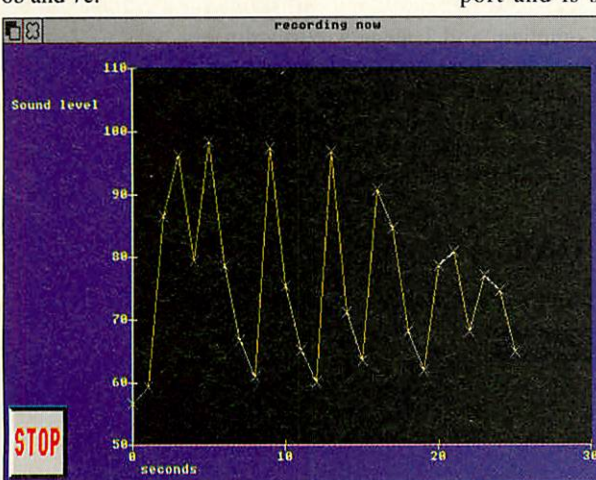
Product: First Sense
Supplier: Phillip Harris
Price: Phone for prices

The heart of this system is the Universal Interface. This can have four sensors connected to it available from a whole range, including light, sound and heat.

The interface plugs into the back of the Archimedes via the serial port and the First Sense software detects which sensor(s) have been connected.

To enable data logging experiments to be carried out within the science lab there is an intelligent interface, DL-Plus, which contains battery-backed memory as well as a small LCD screen.

Results can be stored within the interface and then taken to the IT room to be connected to the computer for further work. First Sense could be used anywhere although I feel science will get most use from it, with some possibilities for Geography. The IT Capability (Control) statements which could be addressed: 1b, 6b and 7c.



Recording in *First Sense*

Product: Buggies
Supplier: Resource and Commotion
Price: £28 and £23 respectively

There are several buggies around suitable for control by the Arc using a version of logo. The prices and quality are varied, but you get what you pay for.

The Commotion buggy requires a control box and therefore will be controlled via a program such as *Coco*.

It's a simple kit using two motors and a sort of Meccano-type chassis. It's robust and although Commotion itself says it's not totally accurate, I feel it's adequate for most applications.

The Resource buggy is based on a Lego kit, and unless you're short of Lego bricks and feel you might need to rob some from the buggy for other projects, I'd be very tempted to glue it together.

The Resource kit is basically everything you need except for the actual Lego. The interface plugs directly into the user port and is supplied with software to drive i t. The IT Capability (Control) statements which could be addressed: 1b, 3b, 4b and 5b.

Product: Weather Reporter
Supplier: AU Enterprise Ltd
Price: £375 + £20 brackets + £110 for humidity sensor

Science is not the only subject to use measurement. Geography can also make a useful contribution to Information Technology Capability with the aid of a computerised weather station connected to the serial port.

This item needs to be installed on the roof of the school and includes a wind and rain gauge, with the option of a humidity sensor.

The station has its own memory and can hold 30 days' worth of weather information. This should be regularly downloaded into the computer for further processing, such as generating a spreadsheet or graph. The IT Capability (Measurement) statements which could be addressed: 1b, 6b and 7c.

Telephone numbers

AU Enterprise Ltd
(0707) 266714
Commotion
081-804 1378
Cybernetic Applications
(0264) 350093
Lego Dacta
(0978) 296293
Phillip Harris
(0543) 480077
Resource
(0302) 340331
Shadow Robot Project
071-609 8522
Techsoft
(082) 43564

...ay present ...ance to play ...n top pianist ...derman.

...-old musician ...dition to star ...aestro when he ...tour at the ...heatre next



...uet, two days ...nes a teenager, ...ingboard to his ... as famous as ...s inspired him. ...be professional ...d travel the ...nathan from his ...me home. "I ...n opportunity ...d."

... has his grade ... and is also an ...rench horn and ...r.

...piano teacher ...l not teach him ..., Richard ...ght m...

Last week the Express reported on the complaints of management of Edgeley branch was not aware of manager on December 10 to make the views of the

"The cage in which aluminium cans are stored was

SCHOOL CHILDREN PROVE THAT NEW BYPASS WILL DAMAGE THE LOCAL ENVIRONMENT

EXCLUSIVE BY MATTHEW DAVIES

USING an innovative new program on their classroom computer children from St. Chad's School have shown town planners that a proposed new bypass would have a detrimental effect on their local environment.

The children surveyed the local area and fed details into their Topographer program, which allows them to look at the relevant area in 3D. They then added the new road along its proposed route and it became obvious that the road would not only affect an area renowned for its badger population but would also distract children in the classroom as they would be able to see traffic moving along the new road.

The children even went as far as to propose a new route for the road to the town planners. The proposed route would have a negligible impact on the area but still provide the much needed relief to existing roads.



A SERIES of sweeping proposals which would abolish free parking in district shopping centres, change some bin collections, increase lettings charges and scale down mileage claims by some council officers, have been announced by Labour.

In the first indication of their intentions si... seizing power jointly with the Conservati... party has produced a ... 1,000 ... serv...

● REDUCING mainten...

Other econ... departmental b... cutting scho... fees.

Th...

Topographer is a major application for the Geography curriculum which allows children (and teachers) to have lots of fun whilst learning all about maps, contour lines, valleys, rivers etc. In fact *Topographer* covers virtually all items found on a map.

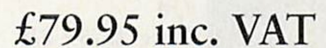
The real break through with *Topographer* is its 3D section which allows you to convert a 2D map into a 3D model on screen. Imagine turning a set of flat contour lines on a 2D map into a 3D model which clearly shows the hill — no more cardboard cut out models or papier mache! You define where you look from, and what you look at.

Topographer also covers aspects of the IT and maths curriculum with its modelling capabilities. Just stop for a minute and think of the projects that you could do with *Topographer*. You could make a map of the local area with churches, pubs, woods etc. and then view it from various places. If there is a bypass proposed you could add it in to the existing landscape and see where it is visible from and what impact it is likely to have on the community. I'm sure you can think of a hundred and one topics.

◆ Fully RISC OS 2 & 3 Compliant and 1 megabyte friendly ◆ Suitable for all ages from 6 onwards ◆ Easy and quick entry of all symbols (over 100) ◆ Wooded areas which translate into impressive 3D landscapes ◆ Definable map size and scale which can be linked to the national grid references ◆ Powerful 3D mode giving a true representation of the landscape ◆ Stunning 3D models which can be saved as a sprite file for use with other applications.

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CARL FOX



Turtle Power

Colin Rouse looks at the various turtle graphics and logo packages available for the Archimedes

The Programmes of Study for the Measurement and Control strand of IT guide us in asking children to look at the way in which programmable devices can be used in our everyday lives and how we can influence their effect by giving them certain instructions.

At Key Stage 2 we are moving more into the realms of simple programming – using sequences and then moving into using the computer to 'control' an external object or objects.

Many teachers will probably be using a LOGO or Turtle Graphics program to deliver much of this.

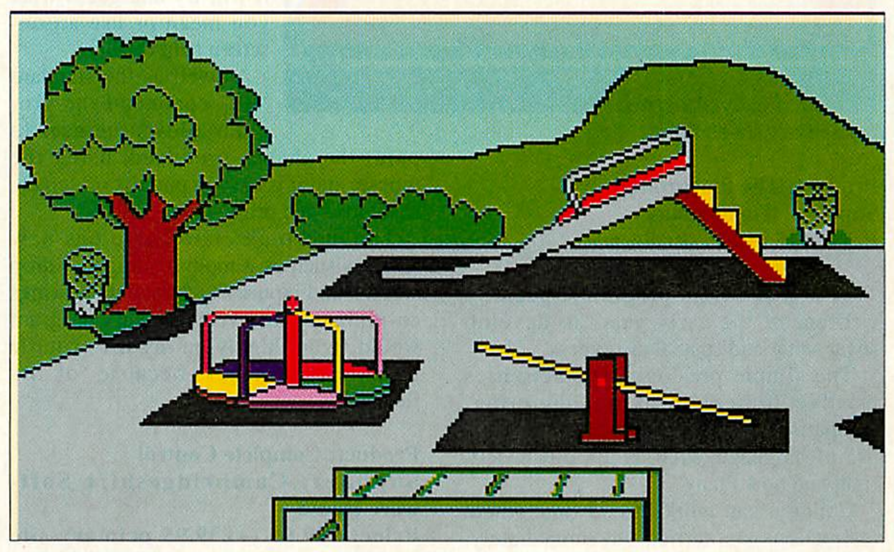
Simple programming using IT can be achieved in a variety of ways, although most of the turtle graphics programs I have looked at use much the same terminology.

We can ask children to use turtle graphics to explore shape and space, thus using the computer as an aid to understanding basic mathematical concepts.

I've looked at a variety of turtle graphics packages and picked a selection, for each of the first two Key Stages.

Each of these take into account such things as their ease of use, the cost of the software – which sadly is becoming an increasingly important factor for many primary schools – and support materials available.

I have then looked at a control program to develop that area at Key Stage two.



The Playground from Topologika

Key Stage 1

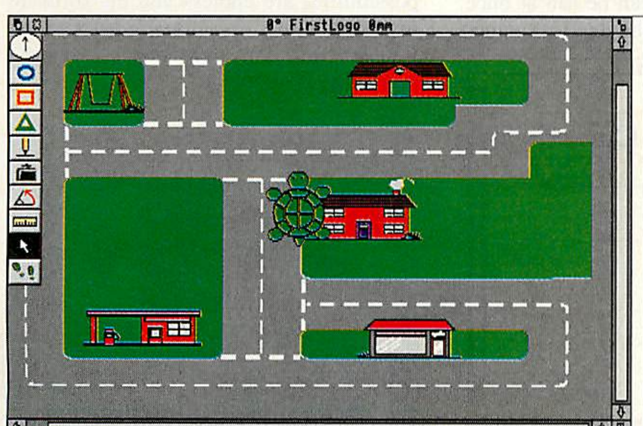
Product: Tiny Logo
Supplier: Topologika (part of a *Tiny Draw/Tiny Logo* package)
Price: £25 (+ £25 site licence)

Although, strictly speaking, not a logo program, *Tiny Logo* is a good way to introduce the idea to younger children of giving the computer instructions to move round the screen.

The drawing area consists of a grid 28 across and 20 down. At the top of the screen are commands to build procedures, with the procedure controls down the left-hand side.

There is also a palette so different colours can be selected, and a set of boxes so procedures can be built.

Children can determine the direction they wish the turtle to move from a selection of arrows at the top of the page, and by selecting units can show the distance they wish to travel.



FirstLogo from Longman Logotron

By clicking on the Select button of the mouse the move is executed. Again, moves can be made in real time or as a procedure.

I have found this a useful program to use with younger children, although 'logo purists' will no doubt argue that it is inaccurate because the diagonal moves should be longer than the vertical or horizontal ones.

I would argue that this doesn't matter as long as the children are guided towards this observation by the teacher.

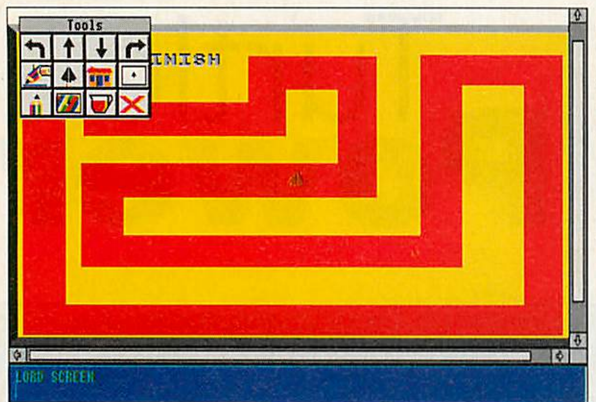
Product: First Logo
Supplier: Longman Logotron
Price: £24 (+ £48 site licence - Primary)

This program bridges the gap between Key Stages 1 and 2. Designed to be used by those who are inexperienced in using logo, it offers a selection of preset operations such as shapes which can be sized and coloured, a facility to measure angles and distances with screen tools and a compass to show which way the pointer is facing.

There are four ways of entering commands: using the mouse, the slate, the keyboard and the note pad.

With a little practice it is easy to use and there are useful pictures which can be loaded so children can use basic commands to explore them, using a variety of pointer shapes.

The program can then be used as a basic logo program as the children progress to Key Stage 2.


Topologika's *Screen Turtle*

Product: The Playground
Supplier: Topologika
Price: £25 (+ £25 site licence)

This is a pre-logo program, specially written for the early years to develop sequencing and spacial awareness.

The simple pre-logo-type activities involve logical thinking, counting, comparison, visual discrimination and the use of language, such as up, down, left, right and how many?

Children can work in real time where instructions are carried out immediately, or in 'procedure' mode where instructions are stored and then executed as a sequence.

A good activity to enable children to start using simple instructions.

Key stage 2

In reviewing the Key Stage 2 turtle graphics programs, I have chosen ones that support a full range of logo commands such as command and procedure modes, and have highlighted additional facilities and features that each may have.

Product: Delta
Supplier: Berkshire County Council – Alphatec
Price: TBA

This is a desktop user-friendly turtle graphics program using standard logo language.

The principle feature of *Delta* is its comprehensive monitoring of what the user types in so that errors are virtually eliminated.

Each command is checked and only accepted if it is correct in the current context. Other features, such as automatically expanding abbreviations, make it a very useful program to use when introducing children to the language of logo.

You can even control up to 32 screen turtles independently if the fancy takes you!

Product: Screen Turtle
Supplier: Topologika
Price: £35 (+£25 site licence). Desktop version £45 (+25 site licence)

Another user-friendly turtle environment. This turtle is also intelligent: if it doesn't understand you it will try and guess what you mean or use an on-screen help facility.

As well as the standard 'fill' command the program allows the user to paint the shapes produced, using the mouse, and it is easy to put text on screen, save, load and print.

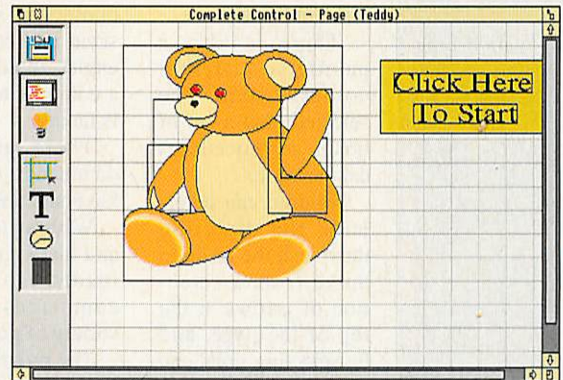
The desktop version also has new features such as a toolbox, drag and drop screens and inputs which include bearings co-ordinates and vectors. This program would figure highly on my list of turtle graphics packages because of its flexibility.

Product: Complete Control
Supplier: Cambridgeshire Software House
Price: £39.95 (+£39.95 primary site licence)

Complete Control has been designed to allow schools with limited resources access to this area of measurement and control. This is a versatile control package that doesn't mean a major outlay.

The control area takes advantage of the Risc OS environment, where you can place commands which are highlighted by either a different font, a size, colour or a combination of all three.

The toolboxes control the program and icons are used to help the user stop, start or move to different parts of the instructions. The page window allows different types of resources to be linked in. *Draw* files, sprites, plain coloured frames or numbers can be represented and then programmed. This means that when the mouse is clicked the command is executed, therefore helping younger users, or the whole program can be run at once with each command highlighted. Another window provides the user with the emulation of a connected buffer box in which the mouse can be used to switch on or off a variety of inputs and outputs.



Complete Control from CSH

Also controlled by the mouse are timers and counters – by assigning values to them. Included in the package is a comprehensive manual, giving tutorials and detailed descriptions of the functions of the program.

There are also sample programs provided with the package which means you will not have to spend valuable hours organising and writing work files.

I have found this to be an invaluable package to use with younger children because it allows the teacher the option of investigating control without the need for expensive equipment.

If you are lucky enough to have a network system, this program is particularly well suited as the children can write and test their control programs on any workstation, then run them through a 'real' control box to see if they work in a practical way, giving plenty of opportunity for evaluation.

I would strongly recommend this software as an excellment addition to any school's library because of its flexibility and cost.

Product: Turtle
Supplier: Porter's Primary Software
Price: £34.50

This is purely a turtle graphics version of logo, designed to run in the desktop environment. It can easily be used by seven-year olds but has the complexity to satisfy the needs of older children.

It is fully multitasking, has zoom and scaleable line width functions and its procedures can be saved as text files. Screen drawings can be saved as *Draw* files so they can be imported into other applications. A simple basic package to use with this age group.

Conclusion

In conclusion, this is probably one area of IT that many teachers have steered clear of as much as possible. However, the possibilities are endless and the software reviewed above have lots of ideas to get you started. The next move, forward hopefully, is up to you.

Telephone numbers

Topologika
(0733) 244682
Longman Logotron
(0223) 425558
Berkshire IT Centre
(0734) 773045
Cambridgeshire Software House
(0480) 467945
Porter's Primary Software
(0742) 582878

John Woollard explains the best ways of implementing Control and Measurement on the Acorn platform

Well before the days of the National Curriculum, when computers in schools were new, plugging wires into the back to control model railways, robot arms and flashing lights was an interest for the computer boffin.

When computers moved into primary schools, the benefits of turtles and floor robots was quickly acknowledged. However, control technology remained an enrichment activity for a few pupils and only with the introduction of the National Curriculum has it moved into the 'entitlement' domain.

All pupils from Level one to Level ten must now be given the opportunity to show their aptitude and understanding.

The minimum requirements for a computer controlled interface are:

- A computer – the whole range of Archimedes desktop computers is suitable for carrying out control technology activities.
- An I/O port – an input/output interface placed inside the computer (see Geoff Preston's introduction on page 41).
- A control box – the external device that allows a number of wires to be attached, usually in the form of banks of sockets. Some sockets are outputs and will drive buzzers, motors or light bulbs. Others are inputs and allow sensors to be attached such as pressure pads, switches, light sensors, heat sensors.
- Sensors and Actuators – it is important that the pupils have access to a range of sensors and actuators that can be easily plugged into the control box. A minimum set would contain a buzzer, light bulb, motor, micro-switch, toggle switch and pressure pad.
- Software – my recommendation is *Coco* from Commotion and/or *Sparkle* from Morley. *Coco* is sophisticated enough to be used at Key Stage 3, yet pupils with little experience of using an Archimedes computer can switch on and off motors and control their speed through the use of the mouse.

Motor Channel	Direction		
A	Forwards	Backwards	Stop
B	Forwards	Backwards	Stop
C	Forwards	Backwards	Stop
D	Forwards	Backwards	Stop

Sparkle's motor control panel.

For more experienced users in secondary schools, *Sparkle* offers control over the computer's internal processes including the playing of music files and the display of *Draw* files.

To simplify the process of collecting everything you need, Hampshire Microtechnology Centre has produced a control pack which is available to any school wanting to carry out control technology activities on an Acorn Archimedes computer. It contains the control box, sensors and actuators and software. The parts are selected from a range of suppliers including Morley, Commotion and Deltronics.

It forms a complete and comprehensive solution for the primary schools and the starting point for secondary schools. Importantly, it contains materials to support control technology activities in the Primary School and at Key Stage 3.

In the primary school, pupils need to understand how computers control devices. They can do this by using the control box and interface. Some pupils will have had experience of programming in Logo as well as using programmable toys, and may be ready to tackle programming a control interface.

The youngest pupils can use the control software to switch on and off their models and the kit can be used by the teacher to demonstrate computer control of devices.

In the secondary school, students are expected to have had a range of experiences in the use of control and programming applications. The pupils may need to be given a programme of precise experiences which develop their skills.

I have devised three procedures that I use at Key Stage 3 to illustrate programming techniques and at Key Stage 2 to stimulate simple program writing and to drive complex models. At Key Stage 1 I use the same procedures to demonstrate computer control.

A Lighthouse

The first application controls a lighthouse. It creates a flashing light, two seconds on, one second off.

At Key Stage 1 the pupils will be able to create their models of lighthouses and simply plug them in. The teacher can explain that a computer can control any electrical device. At Key Stage 2 the pupils can modify this program to create different flash rates and flash patterns.

More able pupils can then move on to programming two lighthouses that flash at different rates or with different patterns.

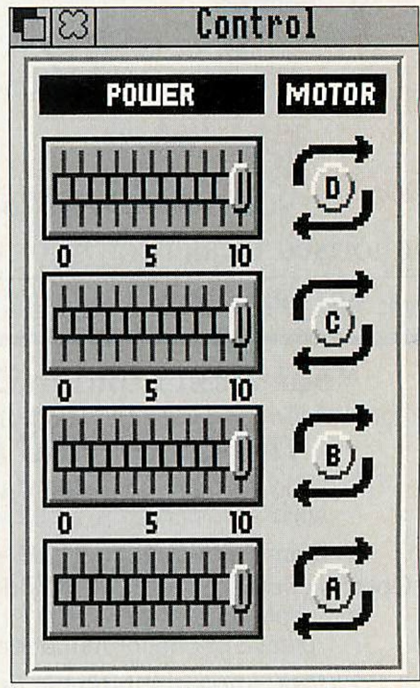
Given experience of using control software with physical artifacts, older pupils may then use the software without lighthouses attached.

Indeed, they can then use the software without a box attached and watch the flash patterns on the screen display.

Talking Teddy

The second procedure used illustrates that the computer can sense the outside world. I have a soft toy which I lie in a cot. (The cot is just a piece of cloth covering a pressure pad).

When teddy is laid on the cot the computer says 'Teddy is lying down'; when teddy is picked up it says 'Teddy is



Coco's motor control with power sliders and forward/reverse switches.

Getting started

standing up'.

With Key Stage 1, children's questions that elicit discussion are:

1. How does the computer know what Teddy is doing?
2. How can we make the computer say the wrong thing?

One four-year-old told me that Teddy was whispering to the computer. Other pupils rationalise the situation and suggest standing Teddy up but pressing down the pressure pad with a hand.

Key Stage 2 pupils can change the 'SAY' statements to apply the same program to other situations such as automatic doors, welcome mats for the front door and so on. At Key Stage 3, the program demonstrates the use of procedures within a procedure (nesting) and how an algorithm is broken down into smaller units. This program also demonstrates the ability of *Sparkle* to control the display of *Draw* files.

Carousel

Another procedure used to demonstrate control technology and its application in real life is a carousel or fairground roundabout. *Ride* calls two procedures which contain the instruction to start and stop the ride. There is no input by the device but it shows that a complex set of activities can be combined:

```
BUILD RIDE
RIDESTART
WAIT 8
RIDESTOP
WAIT 3
RIDE
```

When *Ride* is run, buzzers sound, lights flash, there's a warning message, the motor starts slowly and speeds up, there's another warning message, the motor slows down and stops, there's yet another message...

```
BUILD RIDESTART
SWITCH ON 1
WAIT 1
SWITCH OFF 1
SWITCH ON 2
SAY please fasten your safety belts
WAIT 1
SAY HOLD TIGHT
POWER D 0
MOTOR D ON
LET AA=0
REPEAT 10
LET AA=AA+1
POWER D AA
END REPEAT

BUILD RIDESTOP
SAY thats all folks
LET AA=10
REPEAT 10
LET AA=AA-1
IF AA=3 THEN SAY please sit still
POWER D AA
END REPEAT
MOTOR D OFF
SAY good bye
WAIT 1
SAY have a good day
SWITCH OFF 2
```

The procedure *Ride* has the feature that it calls itself; therefore, it never ends. For older pupils the question can be asked: Why do tube trains have drivers?

The initial answers usually reflect tasks that the driver carries out but could be replaced by a computer. Eventually, discussion can turn to the social reasons: confidence in computers, employment and so on.

All three applications are on the cover disc in both *Coco* and *Sparkle* format. They are in the *Education* archive, in the directory called *Control*.

Those written in *Coco* take advantage of the SAY command, the *Sparkle* versions show the ability to display *Draw* files on the screen. The disc also contains the *Draw* files, which are in the *Auto_Doors* directory.

Coco is my recommended program for younger pupils because of its ease of use. Using the output display, simple mouse button clicks can switch on and off devices.

The Control display has four sliders which enable motors to be switched on and off. Their direction can be reversed and speed adjusted.

Coco is also successfully used in secondary schools but some pupils can take advantage of the ability of *Sparkle* to control *Draw* files, music and other commands.

Sparkle version of Lighthouse

```
; Sparkle beacon
REPEAT
OUTPUT 5 ON
WAIT TIME 200
OUTPUT 5 OFF
WAIT TIME 100
UNTIL INPUT 1 ON
STOP
```

Sparkle version of Teddy

Sparkle enables the pupil to construct one program with a number of named procedures within it.

```
; automatic doors
; pressure pad in 8

draw main "main"
draw 1 "open" "close"

repeat
if input 8 on then call open
if input 8 off then call close
until input 1 on
stop

define open
output 1 on
wait input 8 off
enddefine

define close
wait time 200
output 1 off
wait input 8 on
enddefin
```

Coco version of Lighthouse

```
BUILD beacon
SAY light in 5
REPEAT UNTIL INPUT 1 ON
SWITCH ON 5
WAIT 2
SWITCH OFF 5
WAIT 1
END REPEAT
SAY good bye
```

Coco version of Teddy

```
SAY teddy in 8
REPEAT UNTIL INPUT 1 ON
IF INPUT 8 OFF THEN TEDDYUP
IF INPUT 8 ON THEN TEDDYDOWN
END REPEAT
SAY good bye teddy
```

The procedures TEDDYUP and TEDDYDOWN are:

```
SAY teddy is standing up
REPEAT UNTIL INPUT 8 ON
END REPEAT
WAIT 2

SAY teddy is lying down
REPEAT UNTIL INPUT 8 OFF
END REPEAT
WAIT 2
```



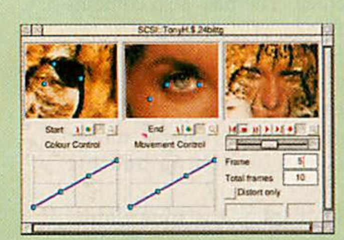
!Rephorm takes two sprites of any size and allows a morph to be generated between them. You simply identify a number of key control points on the start sprite and reposition them to similar places on the end sprite. Rephorm calculates so quickly that the effects of repositioning control points can be seen in real time as you drag them! All calculations are performed in the background so Rephorm never stops the machine from multitasking. The user interface has been widely acclaimed for both its simplicity and its versatility. The morph can be displayed on screen, saved to disc as either an Ace Film or an Acorn Replay file, or individual frames or groups of frames may be saved as sprites.

Since its launch last year, several extra features have been implemented. Chief among these is Object linking and embedding (OLE). Control-double-clicking on any sprite within Rephorm will automatically transfer it into !Paint (or another painting package) for editing. Saving the edited sprite from !Paint will instantly transfer the sprite back into Rephorm, which will then recalculate the effects of the change.

Rephorm has always supported the 16 and 32 bit sprite file formats for the new Risc PC, but a new utility, !UnClear, allows the now obsolete 'ClearFiles' to be converted into sprites for use with Rephorm. Another utility, !Splitter, will split a SpriteFile containing a number of sprites into individual sprites.

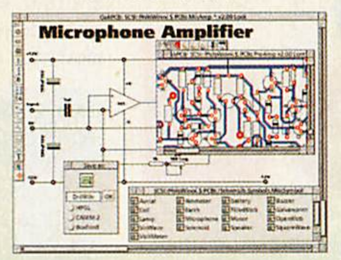
As well as being able to produce morphs and distortions of images, Rephorm can also produce video style special effects such as fades and wipes. These are useful for those people creating and editing Acorn Replay films, providing interesting ways to join two clips together.

Rephorm costs £50
Upgrades to version 1.04 £15



Rephorm

OakPCB II



Having enjoyed considerable success as both a stand alone application, and as part of Design Processor, OakPCB has recently undergone its first major revision to become OakPCB II.

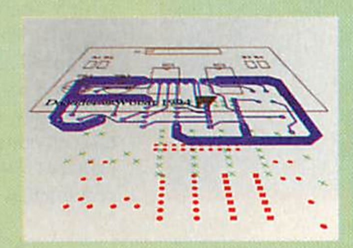
The changes made have been generated as a result of user feedback, and also to take advantage of the improvements which have been made to the operating system since the application was launched under RISC OS 2.

As ever, the user interface to OakPCB is based very closely on !Draw, and users familiar with that package will find no difficulty in getting to grips with the business of creating and editing both schematic diagrams and printed circuit board layouts. OakPCB can handle anything from simple single layer boards all the way up to 4 layer. Comprehensive (and extendable) libraries are provided for both PCB and schematic work.

By default, OakPCB aligns tracks in multiples of 45°, although this feature can now be turned off to allow tracks to be placed at any angle if required. Visual feedback is given whilst in this mode and when editing tracks, so that the tracks change colour when they are aligned at 45° intervals.

A new utility called PCBDrill is supplied which allows circuit boards to be drilled automatically on the Roland CAMM 2 and CAMM 3, and also on Boxford milling machines. Oak PCB II runs on all RISC OS computers including the new Risc PC. It outputs to Plotters and RISC OS printer drivers via Draw Print & Plot (supplied).

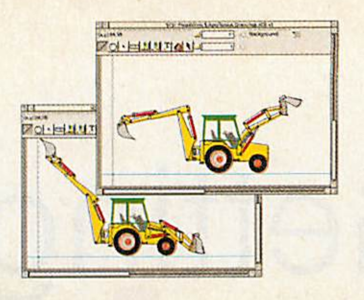
OakPCB II costs £70
Upgrades cost £35



OAK SOLUTIONS

Dial House Chapel Street
Halton Leeds LS15 7RN
Tel: 0532 326992Fax: 0532 326993

Prices shown include P&P but exclude VAT



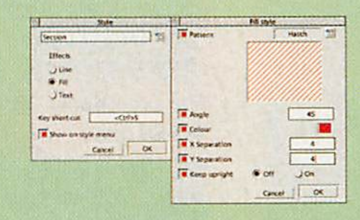
Apollonius PDT is a fully parametric 2D CAD environment. However the user interface differs considerably from conventional wisdom. Normally CAD packages are cluttered with an abundance of methods for drawing each type of object. For example the circle tool will have variants such as Centre/Circumference, Centre/Radius, Radius/Tangent to 2 objects, Three point etc. With Apollonius PDT there is only one Circle tool, but the interface is sufficiently intelligent to know what type of circle you are trying to build by which objects you click on. Indeed the number of options is larger than in most CAD packages.

Other noticeable differences are the apparent lack of short line segments and arc tools. Both of these are instead replaced by an 'intelligent pencil' which allows the draughtsperson to draw round the relevant parts of construction lines in one quick operation.

Being parametric, the package allows the designer to answer 'what if' questions very rapidly. The whole drawing will be recalculated and redrawn as you change the positions or sizes of key objects, or even the geometrical relationships between them, by simply dragging any item around the screen.

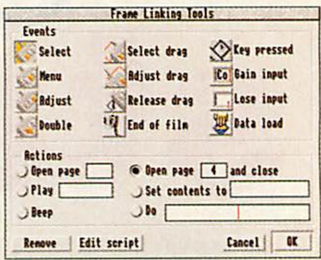
Altogether, Apollonius represents a radical new way of doing CAD. It makes it possible to create clear, flexible, accurate designs, with the minimum of training. The amateur user benefits from the amazing ease of use, while the professional benefits by its unrivalled parametric power.

Apollonius PDT costs £150
Upgrades from WorraCAD and Oak PDT £75





genesis



Genesis Professional and Project are the successors to Genesis II and Genesis Plus and feature greater power, speed, and ease of use. The Genesis menu structure has been simplified by using dialogue boxes to alter the style of frames and pages. Master pages can now be created and added to a library. Application creation and editing has been eased by the introduction of 'Object Linking and Embedding'.

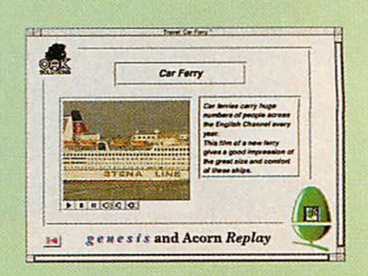
New data types have been incorporated into Genesis, which now supports Artworks, Replay, Windows .BMP and .WAV files. Predefined control buttons can be added to Euclid, Film, Replay and Sound frames. A 24 bit colour model is used throughout and Genesis can handle the new 15 and 24 bit Sprites. The speed at which Genesis pages load has also been increased significantly.

Genesis Professional provides support for Laservision players and for CD. Its powerful Script language has been extended with a host of new keywords and now supports global variables.

Genesis Project is a friendly multimedia authoring system which provides sufficient power to satisfy the everyday needs of most users. Applications authored using Genesis Project are, of course, fully compatible with Genesis Professional so that they can be used as the basis for more complex work. Genesis Project differs from Professional in two significant ways. There is no access to the script programming language, and the overall program structure is simplified with fewer menu options and a reduced range of linking tools. This makes Genesis Project less daunting to the novice user than its big brother, whilst allowing progression to Genesis Professional at a later date.

Upgrades are available from all previous versions of Genesis (including Learning Curve), telephone for details.

Genesis Professional costs £120
Genesis Project costs £50



Heath Robinson

Solving the problem of getting the tennis ball in the bucket

Geoff Preston looks at Minerva's PrimeSolver, and decides that Heath Robinson would have loved it

PrimeSolver is a simulation to create and solve mechanical problems using a variety of gadgets ranging from gears, pulleys and pipes to chickens and frogs.

All manner of bio/mechanical conundrums can be set, leaving others to fathom out the solution. The program will animate the puzzle, showing exactly what happens when the ball hits the switch which turns on the fan which blows the yacht which frightens the chicken which...

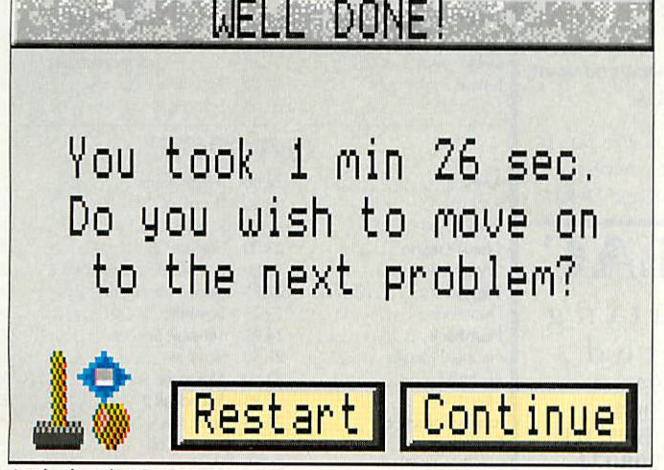
There are three modes. Experiment is where you can use as many of the gadgets as you wish (within reason) and animate them. This option allows you to see what can be done with the gadgets and how they inter-react with one another, but it's not possible to save work from this mode.

Design is the mode where problems are set using an assortment of gadgets from the extensive list. To create a problem you have to do three things. Firstly, decide which bits you want to use to set the problem. These are dragged into position from the gadget box on the right of the work area.

Secondly, you must decide which parts you want to make available to the person trying to solve the problem. Clicking on the figure alongside each gadget will set the quantity of that gadget available in the solver mode.

Finally, you must declare what the goal or goals should be. Setting the goals is achieved via a dialogue box.

The problem is then given a name and the designer must state the object of the exercise so that the person attempting to solve it has some idea of what is supposed to happen.



A winning time?

Setting tasks is almost as much fun as actually solving the problems. Many technology teachers will be able to set students tasks which will involve designing a new problem or task.

Problem solving

Once a problem has been created, it can be saved to disc. The file may contain several problems which could be a set of tasks based on a similar theme and progressing in difficulty. A password protects the design mode and will only allow holders of the password to devise problems.

The file included on the cover disc contains six problems involving gears and pulleys – these will be suitable for Key Stage 2 students. Some ideas for worksheets are also included. You may load pre-defined problems from disc and try to solve them. When a problem is selected an object box appears giving a brief outline of the task and, if the inventor was feeling generous at the time, a clue or two.

The person attempting to solve the problem chooses parts which are then dragged into the work area. When the user thinks s/he has the solution, clicking on Go animates the contraption. If correct, a message is displayed showing the time taken, and if not, the parts can be re-arranged for another try. 'Prime' implies primary school age to me, but this program will be appropriate for older Key Stage 3 students as well as Key Stage 2. CDT teachers could write a module around this program conceivably add-ressing several National Curriculum Technology statements.

The Information Technology statements which it could address are 1a, 2a, 2b, 3a and 4a from Communicating Information, 4e, 5d and 6d from Modelling, 1b from Measurement and Control and 3d, 4d and 4f from Applications and Effects. Refer to the January, February or March issues for a list of statements.

Any teacher who has created some problems for *Prime Solver* aimed at specific NC targets may send them on a disc to me at *Acorn User* and I'll arrange for anyone who sends a disc to receive a copy of everyone else's.

Place your files inside a blue directory folder on the disc together with a text file containing your name, your school, the subject, key stage and which targets you think the problems will address.

Product details

Product: PrimeSolver
Supplier: Minerva Software
Tel: (0392) 437756
Price: £79 + VAT
Education single user: £59 + VAT
Site Licence: £118 + VAT Primary (10 copies), £252 + VAT Secondary (30 copies)

A spritely act

Jack Kreindler looks at the possibilities for creative bitmap graphics work on the Archimedes

Once upon a time there were two art packages. One was called *Revelation Image Pro* and the other, *Pro Artisan2*. Together, this duo had consumed the bitmap graphics market almost entirely, well deserving of their leading positions.

Now, however, the story has changed. The Risc PC, as discussed last month, has brought with it a flood of new 24-bit graphics packages, some designed specifically for the intriguing area of photo retouching, and others fashioned with traditional creative bitmap graphics in mind.

This month we sample from the pot of boiling hot creative art applications that will change the face of sprites for ever.

Apart from Barry Alcock's *FineArt*, a PD program which actually stands as the first 24-bit bitmap package released for the Acorn, there are two dedicated art packages of interest – *Studio24*, from Pineapple and, the long anticipated successor to Clares' *ProArtisan2*, the appropriately named *Pro-Artisan 24*. Addi-tional to these is another package from Clares called *Comp-osition* which is more of an image work-bench than a creative application; a fuller explanation of this package is to follow.

Looking a little further afield, within the vast capabilities of the photo retouchers investigated last month lie many facilities for straight-off image creation.

This is especially true for *PhotoDesk* which, despite almost all its demo pictures conveying its photo retouching strengths, has almost as much in the way of creative tools as either *ProArt24* or *Studio24*. *DA's Picture* really is shaping up, both in its inherent abilities and also in the eyes of those who use it, as a serious and very refined photo retoucher, but even with *DA's Picture* there is room to exploit one's purely creative, artistic potential.



ProArtisan 24 from Clares

It would take an article the size of an entire *Acorn User* issue to give a full assessment of all the packages mentioned so far, but in reviewing the pre-release software each of them gave a distinct overall impression and many highlights and black spots were discovered. Here they are.

Studio24

Entirely written in C, the worst aspect of this program is its speed. However, when creating the kind of imagery that *Studio24* best enables, pace is not of paramount importance, though it causes the unbuffered pointer to create fragmented brush strokes when moderate sweeps of the mouse are made.

Studio24 will work on all Risc OS machines, so super 2Mb VRam Risc PCs are not compulsory, though the speed difference in painting is dramatic on the new Acorn range compared with an A5000.

In a nutshell, everything in *Studio24* is perfectly anti-aliased, from every brush-stroke that may be executed, right through to the icons on the toolbar.

The anti-aliasing is accompanied by brilliant error-diffusion techniques which generate good renditions of 24-bit imagery and the colour picker even in 256 colour screen modes. Features like the smoothing tool option, which adds a variable dimension of drag to brush strokes, in conjunction with support for Essox's range of superb pressure-sensitive graphics tablets, gives *Studio24* an unparalleled paintbrush-on-canvas feel.

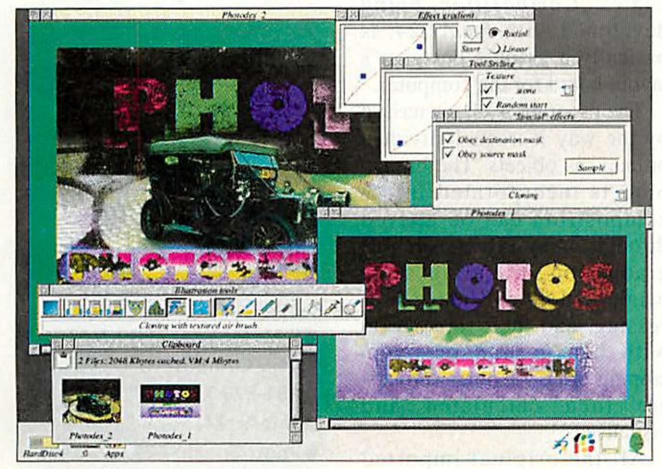
All the effects, apart from the mask (termed the 'stencil' in *Studio*), can be applied with opacity and customisable texture variables, both accessible from the toolbar.

With regard to 'stencils' which can be loaded as two-colour sprites, one soon realises that there is a considerable difference between an 8-bit mask (256 levels) and a 1-bit mask as in *Studio24*.

8-bit masking, which will be supported by *ProArt24*, and has already been implemented in *PhotoDesk* and *DA's Picture*, gives invaluable flexibility when merging imagery or painting through imported sprites, but in most instances *Studio24*'s 1-bit stencil seems to do for most mask jobs.

There is the possibility of 8-bit mask implementation in future versions.

As far as painting onto a blank sheet of screen area goes, *Studio24* is one of the finest packages around. Lacking an 8-bit mask, it is less suitable for serious image



PhotoDesk from Spacetech



Studio 24 from Pineapple — a late name change

compositions made up of large images, which would require a lot of Ram and processor power. Some of the most beautiful art and design work I have ever seen on the Acorn has been produced with *Studio24* alone. That must stand for something.

ProArtisan 24

Of great advantage to *ProArt24* is its user interface. It is basically identical to its forerunner on first appearance – all the icons on the compact tool bar are the same as in *ProArtisan2*.

Once within the menu system I soon realised why it has taken so long to advance *ProArtisan* to its present state, with a great number of additional options, effects, tool parameters and brushes now available.

The version reviewed didn't have implementation of the 8-bit mask – or 'frisket' in *ProArt24* talk – which according to its specifications should expand the capabilities of the program enormously.

How does rendering a *Draw* file with a charcoal brush through a stone mask sound for flexibility?

ProArt24 is incredibly easy to use, with a very intuitive interface and a large number of styles, brushes and effects. As a result, it offers an ideal solution to those who wish to enter into the world of 24-bit painting or progress from older software.

It is a very well packaged and refined application but because of little things like unanti-aliased text rendering, the program tends – more than *Studio24* – to suit the production of graphical imagery and photographic collages. Support for Photo CD and quite a few photo retouching facilities strengthens this characteristic.

The painting game

Though not a dedicated painting application, unlike *Studio24* and *ProArt24*, *PhotoDesk* offers a number of creative facilities which cannot be found in the other packages.

The principle of the program is that all the tools (paintbrush, airbrush, drawing tools and magic wand) can be used to execute all the effects (colouring, toning, filtering, cloning, image processing, masking and cutting) through a texture map and across an effect gradient.

You won't find the same predefined effects and brush styles that would normally appear with a painting application, but the number of effects made possible by the program are almost infinite.

DA's Picture is a dedicated photo retouching package lacking in some of the specialised painting tools supplied with other packages.

DA's Picture is a Linford Christie wearing Raybans kind of a package – seriously fast and dead smooth. I would look no further than this package if simple but professional quality paint work were required in as short a time as possible, because of the program's flawless anti-aliasing and brush stroke rendering, ease of use and outright speed.

Both the photo retouchers also feature virtual memory, *DA's Picture* being the faster, for all those mega pics beyond the capacity of your Ram.

Composition

Clares' *Composition*, being developed with *ProArt24*, is basically a graphic designer's layout board for the computer.

The program is characterised by the way it treats individual bitmaps as objects. The bitmap objects incorporated into a composition can be altered through many effects such as graduation, blending, size manipulation and image processing, and their interaction with background or overlapping areas of other bitmaps are then calculated and visualised.

All the original imported bitmap information is stored in memory which enables you to move and change images without disturbing the background on which the images are overlaid.

Though there have not been any versions available for testing as yet, the product looked very impressive in demonstration. *Composition* is a different calibre of application to *ProArt24* – not that the latter is a low-quality package by any means. *Composition* is very much a professional image workbench and design tool; 16Mb of 32Mb Ram are recommended.

The only major thing missing in *Composition* at the moment is a virtual memory management system, as not many of us have as much Ram as hard disc space.

Conclusions

It is very difficult to critically compare such a diverse range of applications. If the question is one of where do you best spend your hard-earned cash and you're looking for an application with practically unlimited possibilities, then *PhotoDesk* is a fair choice.

For the patient artist interested in producing the kind of work only otherwise achievable on a canvas with a paintbrush, *Studio24* plus-or-minus a pressure sensitive graphics tablet comes out on top.

For simplicity and excellent packaging with a lot of features for more advanced users, *ProArt24* shines out, and for really high quality bitmap design work using lots of imported images, then a *DA's Picture* and *Composition* combination would be my pick of the pack.

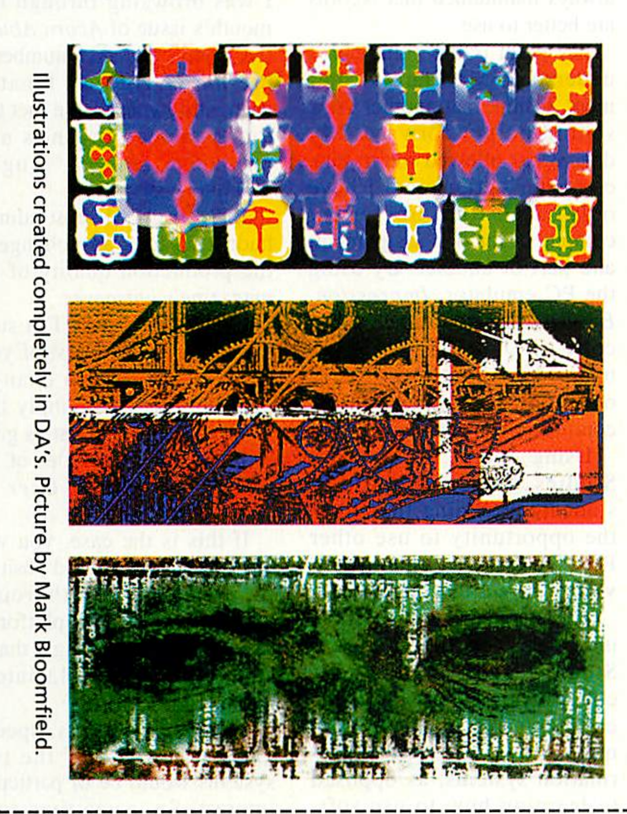
Prices

- ProArtisan 24: £169.95 inc. VAT Clares (0606) 48511
- Composition: £TBA Clares (0606) 48511
- Studio24: £125 + VAT Pineapple Software 081-599 1476
- PhotoDesk: £169 + VAT Spacetech (0305) 822753
- DA's Picture: £99 + VAT CGS Computerbild 081-679 7303
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DA'S PICTURE

DA's Picture is a 24-bit art/image processing package, compatible not only with the new RiscPC, but also the older range of machines and most graphic cards. All the tools, modules and palettes can be moved to where they suit you, and are not fixed.

- **Virtual Memory Management** enables large pictures to be edited without massive quantities of RAM.
- **Dual Mouse Control.** Each mouse button can be assigned a different and independent tool or colour.
- **Tools.** Pencil, Marker, Airbrush, Watercolour, Smear, Dither and our unique Stamp tools allows an infinite number of brushes, such as Fractal, Grass, Ball and many more.
- **Filters.** Erode, Blur, Sharpen, Invert, Contour, to name but a few.
- **Masks.** Both 1-bit and 8-bit masks can be used. It is also possible to import greyscale pictures as masks, and even make a stencil from a mask.
- **Palette.** User palettes may be defined and saved. The "Colour Pick" tool makes grabbing colours from pictures child's play.
- **Block Clipboard.** Cut up your images and paste them in numerous ways. The clipboard menu allows you to define many parameters before pasting an image, e.g. any degree of transparency, colour saturation, negative, tinted, scaled.
- **Zoom.** The magnify tool allows super fast zooming in and out. Simply aim the mouse and click until you reach the required zoom level (13 levels). Zoom out to one 17th of original size.
- **Gradient Creator.** Design Linear or Radial gradient fills for use as backgrounds, masks etc. Gradients can be dithered to obtain many different effects.
- **Colour Gradation.** This module allows images to be re-coloured by adjusting the amount of each colour present in an image. For instance change greys to sepia, or correct the colours in a scanned or digitised picture. These settings can be saved for further use.
- **Import/Export.** TIFF, as well as Sprite, JPEG, TGA, GIF and PhotoCD.
- **Options.** DA's Picture is a modular program, this means peripherals such as Scanners and Digitisers can be used within the program. The first module (available soon) is for the Epson 24 bit colour scanner, next will be the Vector Module. This module is used to import or draw vector graphics. You can use various tools on vector paths, for example airbrush, marker, stamps.



Illustrations created completely in DA's. Picture by Mark Bloomfield



The tools used to create the illustrations. All Trademarks Acknowledged.

Please send me a copy of DA's Picture for the Acorn @ **£120.00** inc VAT and p&p (Single User Version)

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POSTCODE: TEL:

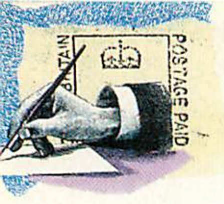
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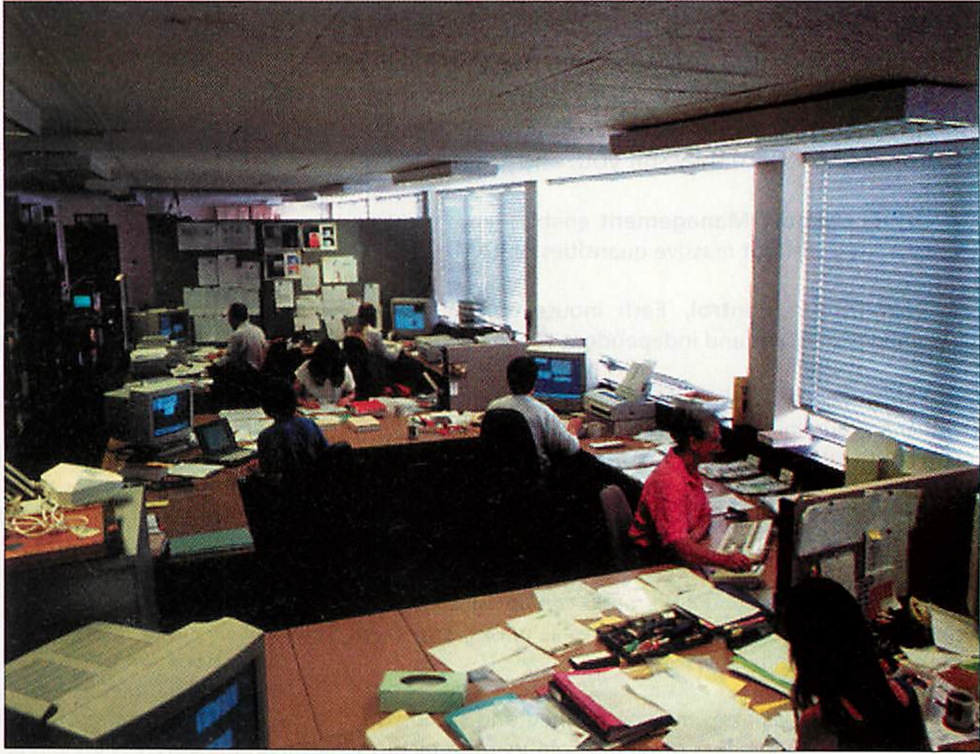
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Acorns can be used effectively in businesses

Future publishing

I read with interest the May issue of *Acorn User*, and felt I must comment on two items.

First, Mark Colton suggested that Acorn do an 'Amstrad' and 'pile 'em high and sell 'em cheap'.

May I respectfully remind Mr Colton that Amstrad nearly went under following this policy and is certainly not considered to be in the mainstream of computing any longer.

Second, there were comments from various readers about you no longer producing *Acorn User* on Acorn machines with Acorn software.

Although I use *Impression II* for DTP I agree with you – it is a real pain for getting your work imageset. You are a commercial operation and you have to work within the confines of the present system.

Finally, so convinced am I about the excellent future of Acorn that I am seriously considering setting up my own company to produce printing plates, bromides and films directly from Acorn machines.

If there is demand, perhaps people can write to me at 61 Frensham Close, Southall, Middlesex UB1 2QY. Thank you for an excellent magazine.

Keith Parker
Middlesex

Good education

I write having just spoken to Geoff Preston, who informs me that there has been much criticism of his article, Risc PC and Education, which appeared in the May 1994 issue of *Acorn User*. I feel that some defence should be offered for what was in my opinion an excellent article.

Not only was it challenging and persuasively argued, but the assertions made were fully justified by factual examples.

These agree entirely with my own experience of educational computing and of other platforms.

The Acorn press too often lacks opinion and this sort of thing makes a refreshing change.

I should also like to take this opportunity to compliment you on the Education Page introduced over the last few months. It impressed me from the start because it offered a view of Acorn machines in practical use.

Stephen Tudway
Hampshire

It's interesting to note that Stephen says that the Education Page was introduced over the last few months. Actually it's been going for years – it just goes to show that new blood can transform an existing area of the magazine.

Business as usual

I read with interest your interview with Dave Clare and felt compelled to write in response to the following comment made by Mr Clare: 'I couldn't recommend Acorns for use in Business Studies'.

I am a mature student studying for a degree in Business Studies. Up until two weeks before my course began in September 1991, I had never touched a computer, but then a friend introduced me to his Archimedes A440/1.

Within days I was hooked and by the following April I had persuaded him to buy an A5000 and let me buy his A440/1. By temping during my time at university I have gained experience in several other PC packages, but have always maintained that Acorns are better to use.

My point is this: although I understand Mr Clare's comment, I think that another view should be put forward. My degree has allowed me to take computer options and I have only used the university computers for one assignment, and part of another. By using the PC emulator, *Impression*, *Eureka*, a hand scanner and a copy of *DataEase* from my tutor, I have been able to carry out all my assignments in the comfort of my own home.

Using Acorns for Business Studies will do no harm to students providing they have the opportunity to use other PCs and software, and at university there *is* that opportunity.

The computer options at my university on the Business Studies degree course have concentrated on the forecasting and strategic decision making available from information systems, as opposed to learning how to use software packages for business purposes.

In conclusion I would recommend using Acorns with business studies.

Miss Angela Hardington
Burnley

See Viewpoint.

Looks OK to me

I was browsing through this month's issue of *Acorn Abuser* (sic), and I noticed a number of die-hard Acorn fanatics castigating you for the fact that this esteemed organ is now produced on a (ugh!) Macintosh system.

Is this right? I must admit I hadn't noticed any change in the production quality of the magazine *whatsoever*.

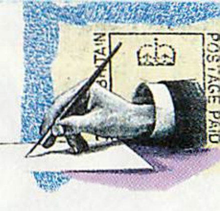
Given that I and, I'm sure, 99 per cent of the rest of your readers noticed no change, doesn't that rather imply that Acorn systems are just as good at producing magazines of the quality of *Acorn User* as Macintoshes are?

If this is the case, you will soon be in a very good position to make a thorough comparison of both platforms in an area – publishing – that is supposed to be a Macintosh stronghold.

The relative costs, speeds and ease of use of the two systems would be of particular interest. So, some time soon can we please have a comparative review of the old and new setups, based on the personal experiences of *Acorn User* staff?

Simon Smith
Kent

A very good point about



nobody noticing that we'd switched to Macs until I actually mentioned it in the News section. That's one up for Acorn, I suppose.

On the subject of a comparative review, that's not a bad idea, but seeing as there's only one member of staff who has actually worked under both systems, it might be a little biased. That's me, and I have to say that I'm less than impressed with the Macs I have to battle with on a daily basis.

Keep your eyes on the DTP column for all the latest news and views.

Upgrade fan

I would suggest that the readers criticising repeated software upgrades and memory mana-gement of Risc OS in your June issue should perhaps take the obvious precaution of checking out the advantages of the alternatives before purchasing another machine.

With regards to memory problems, no doubt this could be attributed to Acorn's limited memory types, as with a PC one has the advantage of Expanded, Extended, Conventional, Upper and Higher memory facilities, all available to enable the user to take advantage of the 16-bit addressing field.

At last Acorn is taking a step in the right direction with the appearance of the Risc PC with its ability to run as a PC.

One can only hope that future machines will eventually dispose of the Risc OS bit, with the burden of its dynamic memory management, and ease of programming.

D R Brock
Middlesex

Here's a tip for the speed readers among you: don't read the above letter too quickly, or you'll miss the sarcasm. It's actually a pro-Risc OS letter, and quite rightly too.

Ask away...

Thank you for the extensive coverage of the Acorn Risc PC, but there are some questions which I would like answering.

1. Why will software houses continue to support Risc OS? With Acorn's extensive penetration of the education market it is currently sensible for educational publishers to support the Acorn machines.

This is, of course, further boosted by the Tesco 'Computers for Schools' offer. But, once manufacture of the Risc OS-only machines has ceased and there is an increased penetration of the Risc PC into schools, surely software houses will switch to Windows as the preferred operating system?

2. With the current aggressive TV advertising campaign for Microsoft Windows, isn't it about time Acorn started as well before it is too late.

3. Will Acorn use the education market as the income provider and now concentrate on new markets – the home user and serious business?

4. The Acorn Risc PC – excellent! Thank goodness Acorn has gone back to its roots and produced a machine which is upgradable. But is it really fair to charge £116.32 for the PC card with the computer and £297.57 as an upgrade?

5. Any chance of a new Risc OS featuring cross-application 'cut and paste' text and graphics?

Keith Hampton
Surrey

1. The A3000 and A3020 are the most popular educational machines, and will remain so for primary schools, if only because of the price, so there is a slim chance of Windows becoming the norm. There are no plans to introduce machines to replace these just yet, and Acorn is not selling the Risc PC as a replacement.

2. Yes. Next question, please.

3. Acorn already sells to the home user, and has done for some time, and it is also aiming at small businesses in the DTP market. See the Viewpoint below for a discussion about Acorns in bigger businesses.

4. Look at it the other way round – is it really fair to charge so little for a fitted PC upgrade? Yes, it is.

5. As for new versions of Risc OS, goodness only knows. Judging by the amount of third-party effort which had to be put into OLE just to get something working, I doubt Acorn will get stuck in. This is a criminal shame, when we are crying out for equivalents to OpenDoc and OLE 2.0.

Drop us a line at Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP

Viewpoint

Acorns in business: it's a tricky area, this. Opinion seems to be divided about the suitability of Risc OS machines for small or large businesses.

On one hand there are the die-hard fans. The argument that the business software on the Acorn is perfectly suited for a business environment is one that can go on into the wee hours of the morning, but there is no doubt that packages like *Eureka* and *S-Base* are more than capable in holding their own against PC competition.

In fact, if you've used *Excel* and *Eureka*, you could be forgiven for thinking they were the same program, just on different platforms.

The speed of Acorns is another very valid point. The Risc OS desktop is much faster and more responsive than Windows, even on a fast 486 PC, and features like drag and drop and the icon bar improve the efficiency of the system – anyone who has used both a PC and an Acorn will agree that everyday tasks like saving a file or scrolling around a document are much quicker on the Acorn. And time is money.

On the other hand, though, there are those who don't see Acorns as viable business machines, for one of two reasons. The first, and most persuasive, is the old chestnut that the Acorn isn't a PC, and therefore can't run *Wordpertect*, *Lotus*, and so on. But unless the company is already computerised with PCs, why do you need to run these packages? Acorns will suit you fine if you're computerising your company from scratch: it's when Acorns have to be integrated into an environment which is already PC-based that the problems can arise, but they're not insurmountable.

With the advent of the Risc PC with its PC card this argument isn't so valid, but even so the lack of ability to transfer files between Windows packages and Risc OS is a problem – you have to reduce files to a lowest common denominator, such as RTF for textual work, or EPS for vector artwork. It's possible, but not a lot of fun.

The second argument is that companies want to be able to swap files, and if one company isn't using the perceived industry standard – PCs or Macs – then that company is at a disadvantage.

But how many companies do you know that regularly need to exchange files which aren't in pretty basic formats, like CSV or PostScript? Not that many, I bet.

The Acorn platform might not be being pushed by Acorn as a great business machine, but given the right systems analyst setting up the system, you could run a business better on Acorns than on PCs. It's just a case of finding a systems analyst who's heard of Acorn.

Mark Moxon

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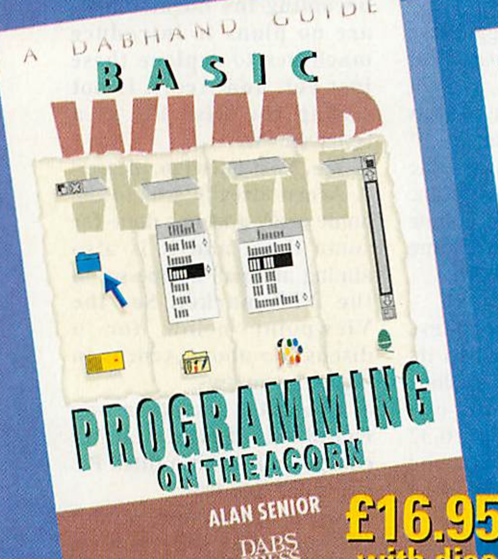






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Other Acorn Books

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GAME SHOW

Things are changing fast and I know some of you are a little sceptical about this Risc PC revolution: so what will it all mean to Acorn games players?

Indeed, the word on everyone's lips at the moment just has to be *PC*. Another word which will no doubt spring in there with it is *compatibility*. String the two together and you have a whole line of worry to keep you awake at night.

Should I buy the new machine complete with a spanking new PC Card? Should I upgrade? Will all those famous PC games then work on my new machine? Will I be able to play *Sim City 2000* like my mates can? Or should I just pop out and buy a cheap clearance 386 PC and start reciting DOS commands in my sleep?

The answer to the last question is definitely 'no', but what about the others? I can't advise you on that, but I *can* point out the many wonders of PC games and how they have single-handedly revolutionised the gaming scene as we know it.

Firstly *money*. There is some serious money to be made in the gaming industry and the PC market has certainly been there to rake it from us.

Secondly, *research*. Believe it or not the larger companies don't just dream up a concept then three months later you get a re-hashed *Defender* clone. No, indeed *years* are put into this and in some cases whole books are based upon a moving graphical concept.

Our third and final word for today is *variety*. Now I know there are not that many types or format of games out there, in fact you can normally boil them down into a handful, but the PC market is so competitive that there is a game for every type of player and minority interest.

It all adds up to a great little word rarely seen which is *quality*. Now there are exceptions, but on the average the ground-breaking games from the likes of Microprose, Electronic Arts and Virgin are great challenges, and the manuals and documentation alone put even Atomic Reactor Main Control Emergency Procedures to shame.

What this adds up to is a new and frightening deluge of games that will soon be flooding the familiar trade stands, magazines and shops where the Acorn once rested in peace.

Be prepared. More importantly keep your eyes fixed upon these pages as the gaming concept as you know it takes a serious left at the lights and heads up the motorway in the fast lane.

Steve Atherton

Cheats

E-Type

When you hit an oil patch press 'p' for pause then wait for the soundtrack to halt. On resuming the game the car is no longer in any danger of skidding through the slick!

Blood Sport

On the title page, hitting the space bar shows the stats of each fighter in the two-player mode. By pressing keys E and N together the barriers on the screen can be removed during the fight. Hitting the same combination returns them to the confrontation.

Paradroid

At the start of a new game pause and hold down C,2,T and a number on the keypad of the ship you wish to go to. Next, while nearly all the fingers are pressing the keys, free a digit and press ESC. Everytime you start a new game you will be back aboard the selected ship. Easy.... just like Twister!

Lemmings 2

On the title screen click with select the top left-hand corner, then click top right, bottom right, bottom left then once again in the top left corner.

Now pop around the screen double-clicking the corners and a cross will soon appear over the exit, with a smart yell from the little creatures. On playing the game you now have full access to the levels with the forward arrow icon.



Blunderbox

Apologies to Illusions and Gamesware. The price for the Illusions Competition Pro joypad was missed out of last month's review – it is £24.99 for a single pad – and the pictures were mixed up.

Sim City 2000: do you want to be able to play this on your Risc PC?



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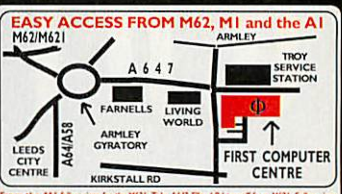
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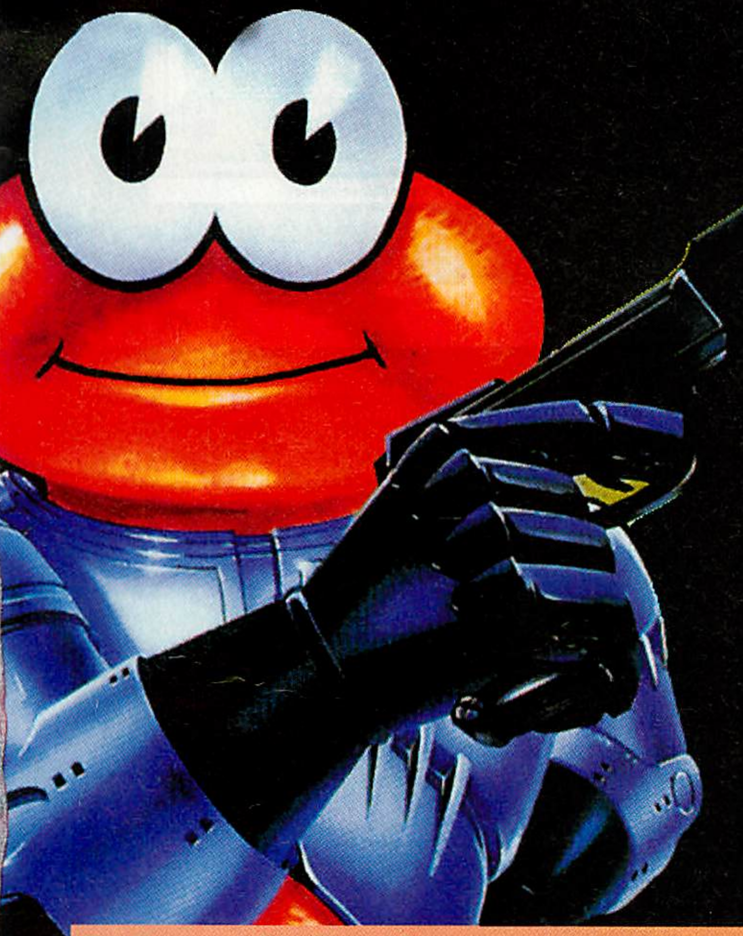
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ROBOCOD

JAMES POND II PLUS





Price: £7.99 (to existing Robocod users)
Supplier: Gamesware
Tel: (0703) 456523

I could spend this entire page drilling mindless fish jokes into you but instead I'll just lay down the facts and indeed avoid any reference to our scaly friend with that persistent 15 second memory.

You will need two things to play this disc, first an Acorn machine and secondly the original program – the latter is still available from the very friendly staff at Gamesware and no doubt ranks highly in their best-selling discs of all time.

Robocod is established as one of the best cutesy platform challenges on all formats and sees you battling various foes and increasingly difficult themed levels to save Christmas – a considerable task in August, let me tell you.

That's the original, now what's new in this update disc? Well you get five more levels, which I must confess I might have seen in other formats, and some more of that catchy 'I know this one' music that has mutated from various block-buster films.

The object of the game is still to save Santa's big day out and a few extra and some-what more taxing problems are presented in some quite incredible levels to both explore and admire.

To complete your mission you must hunt through the scenery to find the lost and confused penguins, which I admit is a somewhat strange task.

Still, in doing so expect hidden bonuses, the odd and not so odd bouncing baddy bent on your demise and of course the familiar starting position of the North Pole Toy Factory.

The graphics remain true, the music still grates and the gameplay is as good as it ever was.

For £8 I must say it's a great investment for battered heroes everywhere. Damn, I did it. A fish joke.

Steve Atherton

Robocod cheats

These cheats are for the James Pond II version not the upgrade.

- First locate the building with lots of strange objects on the roof, it's at the start for those still struggling. Now collect them in the following order: Cake, Hammer, Earth, Apple, Tap. This spells cheat which you can dow do.
- Secondly enter the first door and keep walking right until you find five more curious objects. Collect these thus: Penguin, Oil, Wine, Earth, Rocket. Got it? It's the word POWER.
- Still in the same area move even further right and another collection of five present themselves. Collect: Lips, Ice cream, Violin, Earth, Snowman. I know we've had this one before but this cheat gives you infinite LIVES and is handy in level research and mapping.
- A hidden level is essential for any platform game and to locate the Robocod experience walk right from the start of the game, jump the first two doors then walk up the steps which quickly follow.

Jump clear off the steps and move right to stand beneath a building with three doors. Take to the roof, a quick left and a very special experience awaits behind any of the three doors.

THE TIME MACHINE

Supplier: The Fourth Dimension
Tel: (0742) 700661
Price: £29.99

Right, hands up who knows what TARDIS means. Time and Relative Dimension in Space or something so I'm lead to believe – quite a mouthful, but with time at your fingertips I guess that's not really a problem.

UK Gold on Satellite TV is showing re-runs of the entire Dr Who series and apparently the viewing figures are very favourable. As is, I may add, the value of all Dr Who-related toys and memorabilia.

I was informed that the Woolworth's Dr Who chocolate Christmas tree decorations boxed from 1972 sold for a couple of hundred pounds. That's worrying. I'd have eaten them.

Fourth Dimension has seized the day with this latest offering *The Time Machine*. Based very loosely on the Dr Who concept, obvious copyright has lead to certain twists of reality with the TARDIS replaced by PORTALOO. Now, please don't ask me what this means as you may have missed the joke. By a clear mile.

A portaloo it is and on loading the game this might come as a shock, because the crisp TARDIS sample and the equally-startling vocal links make spending time in a loo just a tad disconcerting. Of course, the reason for this is all too apparent to those of you who have ever tried to make a certain budget film.

Time Machine uses digitised shots of scenery and events much in the same vein as the sister title *Haunted House*.

The environment that you play in is very PC – that is a windows set-up with a click and discover main window and a smaller box set aside for the 'rucksack' where all items of apparent and not so apparent use are held.

Of course you are limited to the amount you can hold. To transfer from one window to the other just click on the object and move across. However, some items you may wish to move are breakable so this must be kept in mind. After all, trying to play around with a milk bottle some six to eight feet in the air might have shattering results if you suddenly let go. The aim of the entire adventure is to rescue the portaloo's owner who has gone and got trapped in a time vortex. Rescue is no mean feat and involves puzzle solving of the highest level and some quick sorties through time and destination to recover six segments that all slot together to form the Key of Time.

Puzzles range from the truly bizarre to some downright sneaky versions which make you punch the air on solving (for example, what is the password.)

Further challenges are presented in Krypton Factor-style assembly of devices through to Name That Tune and even an advanced version of Simon Says, leaving you thoroughly numb with despair.

Still, the word association challenge and even the maths make up for any stupid mistakes. All in all this has to be the one of the most thorough adventure games I have ever attempted, with the familiar storyline adding to the atmosphere.

The gaming environment allows mouse control of your character with forward, back, left and right selected by clicking on the icon – though only when available.

A magnifying glass is also provided for close up inspection of the playing sites and should be used at all times in case you miss the smallest detail which could decide your advance through the game.

Just in case you are uncertain, the small icon in the bottom right informs by percentage the ground covered.

To sum up, a great game! Definitely a class A product that has just about every type of puzzle and hardship thrown in your way.

If you can walk away from the screen within an hour then you have no palette for adventure!

Steve Atherton



CAVES OF CONFUSION

Supplier: Generation Design
Tel: (0258) 452507
Price: £6.99

I remember a long time ago when getting into a pub was a big thing in anyone's life, in fact getting served was an even greater cause for celebration.

Once the numbness wore off and you adjusted to the surroundings it took a strong-willed person indeed to resist the temptation of the arcade machines that littered the lounge area.

One such machine was *Scramble*, not the upright version you understand, more the table-top version with the obligatory glass ring stains that distorted the important details. What has this got to do with *Caves of ConFusion*? Nostalgia that's what. Loading up this game brought it all back to me, Snakebites and all.

This is the first offering from a trio of individuals who call themselves Generation Design and the game, as you may have guessed, is a sideways scrolling shoot-'em-up very much in the vein of *Scramble*, with you constantly moving forward and shooting all that appears in your way.

The enemy comes in waves and in the first stages things are certainly just a little bit predictable, but fortunately not so that you can leave the game hands free while the baddies circulate around.

In fact this method has been specifically targeted with some strategic scenery obstacles put in your way.

These obstacles range from little cute planets, or should I say asteroids, to curious bubble affairs and even huge chunks of ceiling or floor that just hover menacingly.

This game can support a joystick, namely the Leading Edge Interface type, or you can elect for the keyboard.

Using the keys is simplicity itself as only five inputs are ever needed, namely up, down, forward, backward and of course fire.

I was a little apprehensive of keyboard control because somehow I always feel out of touch with perhaps two or more keys being depressed loosing the finer movements. Not so.

Both keyboard and joystick respond true with great speed of control.

Weapons available under the fire button are wide and varied with anything from homing missiles right through to long-range lasers and powerful bombs.

Selection is automatic and does not cause too many flutters as the timing is just about right, and you are not left short with a pea-shooter against a rather large and fast mother ship affair.

The game has four increasingly harder levels and believe me they are harder! I played for some time and after a rough 'system' was established I could comfortably complete the first two levels. Later levels, well it was a struggle to say the least.

Fortunately the game includes a password system, so don't despair if you can't face the earlier challenges again and again.

I would say an accomplished shoot-'em-up fan will definitely complete this game but, as with this type of challenge, the player will never see the full presentation as staring at that small spot just ahead of the craft is the order of the day. This is a shame as there are some great touches with both scenery and type of enemy craft to 'remove'.

Music is provided with over 140K of four-track stereo tunes, all atmospheric and certainly enhancing the experience. If it all gets too much for you, an option lies in switching it off and returning to just the sound effects. Also coded is some 112K of samples.

Caves of ConFusion is a good opening product from Generation Design and although the game is not all that original, it does never the less provide a considerable challenge.

The password feature will tempt you to return to conquer all four levels and all in all the presentation is as good as anything I have seen from the commercial sector.

If you don't own a standard shoot-'em-up then this is worth considering, especially with an average saving of £23 against the big boys. Good effort, I look forward to a more original second attempt as these boys show promise. May the 'Arm' be with you too.

Steve Atherton

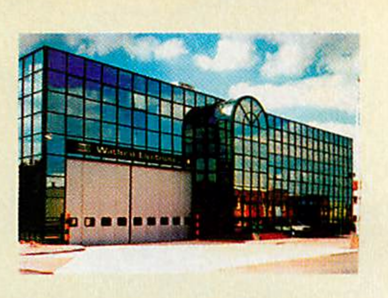


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All kits are supplied with interface (except A3020 upgrade), connecting cables, fixing screws and comprehensive instructions.

A300/A400 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0520	40Mb	18mS	£99
ADA 0550	80Mb	18mS	£169
ADA 2000	170Mb	13mS	£199
ADA 2010	250Mb	13mS	£229
ADA 0580	340Mb	16mS	£289
ADA 2030	420Mb	13mS	£399

A5000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 2040	170Mb	13mS	£179
ADA 2050	250Mb	13mS	£199
ADA 0880	340Mb	16mS	£239
ADA 2060	420Mb	13mS	£249

A3000 External IDE Drives

Part No.	Capacity	Access Time	Price
ADA 1020	80Mb	18mS	£229
ADA 2070	170Mb	13mS	£289
ADA 2080	250Mb	13mS	£279
ADA 2170	340Mb	16mS	£339
ADA 2180	420Mb	13mS	£439

A3000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0750	60Mb	19mS	£149
ADA 0720	80Mb	19mS	£179
ADA 0730	120Mb	16mS	£199
ADA 1070	200Mb	13mS	£369
ADA 2090	340Mb	13mS	£479

A300/400 IDE Hard Cards

Part No.	Capacity	Access Time	Price
ADA 0890	60Mb	19mS	£149
ADA 0670	80Mb	19mS	£169
ADA 0680	120Mb	16mS	£189
ADA 1070	200Mb	13mS	£359
ADA 2090	340Mb	13mS	£469

A3020 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 2120	60Mb	19mS	£139
ADA 2130	80Mb	19mS	£169
ADA 2140	120Mb	16mS	£209
ADA 2150	200Mb	13mS	£339
ADA 2160	340Mb	13mS	£449

Accessories

A5000 2nd drive accessory kit	£10
External Case & PSU for HDD	£49
16-bit IDE Interface - A300/A400	£39
IDE ROM Upgrade to v2.10	£16
A300 Podule case	£10
8-bit IDE Interface - A3000 internal	£49

ARM3 Turbo Card



Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

The upgrade can be fitted by the user in A300 and A400 machines, but for owners of the A3000 we can collect, fit and deliver your computer back for an additional £24.

Owners of A300 and old A440 models will need a MEMC1A upgrade to use the ARM3.

Offer Price

£89

BUY ARM3 & RISC OS 3 TOGETHER FOR ONLY £155

RISC OS 3.1 Upgrades

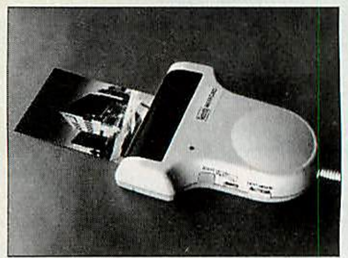
RISC OS 3.1 Single User upgrade	£69
RISC OS 3.1 Bulk Software upgrade	£319
RISC OS 3.1 Hardware upgrade	£24

Scan256 Handscanner

If you need a 256 greyscale handscanner for your Archimedes or A3000 (external), then look no further.

Scan256 gives you up to 256 grey levels at a maximum resolution of 400dpi and is supplied with state-of-the-art software. This makes it the only sensible scanning and image processing solution for the Acorn 32-bit machines.

The highly advanced software supplied with the scanner offers you many different image processing options, such as dithering, image enhancement, edge detection, brightness and contrast controls, plus many more.



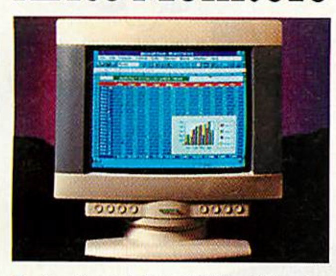
Features include:
- Multiple copies of an image in memory at once
- Advanced image processing tools
- Convolution digital filtering with over 100 filters
- Adjustable scale & size during scan
- Save images in industry standard formats
- True brightness, contrast and gamma controls
- Selectable scanning modes
- 105mm scanning width
- Ability to rotate and shear the image

Scan256 for A300/A400/A5000	£149
Scan256 for A3000 external	£169

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588

Access VISA AMERICAN EXPRESS

Aries Monitors



For the ultimate in high definition, flicker-free monitors displaying the sharpest text and graphics look no further than the new Aries Monitor range.
They're easy on the eye, safe and offer superb value for money – as you'd expect from Watford.
All monitors require SVGA VIDC Enhancer and 9pin to 15pin VGA adaptor.

Aries 14" SVGA Monitor
- 14" high res 0.28mm dot pitch tube
- 800 x 600 NI (1024 x 768 max resolution)
- Horizontal frequency: 29KHz to 38KHz
- Adjustable horizontal & vertical controls
- Tilt & swivel base
- Complete with connecting lead (15pin)

£165

Aries A-Scan Pro Monitor
- 14" high res 0.28mm dot pitch tube
- 1024 x 788 NI @ 72Hz
- Horizontal frequency: 29KHz to 70KHz
- Front mounted user controls
- Auto pincushion/trapezoid control
- Complete with connecting lead (15pin)

£199

Aries 6000 LR Monitor
- 15" high res 0.28mm dot pitch tube
- 1280 x 1024 NI @ 60Hz
- Horizontal frequency: 30KHz to 65KHz
- Microprocessor controls & LCD display
- Tilt & swivel base
- Complete with connecting lead (15pin)

£279

Aries 6500I Monitor
- 15" flat screen 0.28mm dot pitch tube
- 1280 x 1024 NI @ 60Hz
- Horizontal frequency: 30KHz to 65KHz
- Microprocessor controls & LCD display
- Precise colour controls
- Complete with connecting lead (15pin)

£299

Aries 7500 Monitor
- 17" flat screen 0.28mm dot pitch tube
- 1280 x 1024 NI @ 60Hz
- Horizontal frequency: 30KHz to 65KHz
- On-screen display of user settings
- Tilt & swivel base
- Complete with connecting lead (15pin)

£525

Aries 7560I Monitor
- 17" flat screen 0.26mm dot pitch tube
- 1280 x 1024 NI @ 60Hz
- Horizontal frequency: 30KHz to 65KHz
- Microprocessor controls & LCD display
- Precise colour adjustment
- Complete with connecting lead (15pin)

£499

Memory Upgrades
- A310 to 2Mb RAM £89
- A310 to 4Mb RAM £149
- A3000 to 2Mb RAM £49
- A3000 to 4Mb RAM £119
- A3010 to 2Mb RAM £49
- A3010 to 4 Mb RAM £139
- A3020/A4000 to 4Mb RAM £79
- A410/1 to 2Mb RAM £35
- A410/1 to 4Mb RAM £70
- A420/1 to 4Mb RAM £105
- A540 additional 4Mb RAM £249
- A5000 to 4Mb RAM £79
- A5000 4Mb to 8Mb RAM £259
- RiscPC additional 2Mb RAM £85
- RiscPC additional 4Mb RAM £139
- RiscPC additional 8Mb RAM £279

PC Cards
Transform your Archimedes so you can run standard PC MS-DOS software and even Windows 3.1 with the Aleph One range of PC cards. Available as a bare card with either 486SLC25 or 486SLC2-50 (no memory) or with 4Mb RAM fitted. Prices do not include DOS or Windows, which we can supply for an extra £99, at time of purchase only.
- 386 1Mb RAM - A3020/A4000 £225
- 486 4Mb RAM - A3020/A4000 £420
- 486 25MHz 0Mb RAM - A5000 £369
- 486 25MHz 4Mb RAM - A5000 £529
- 486 50MHz 0Mb RAM - A5000 £449
- 486 50MHz 4Mb RAM - A5000 £609
- MS-DOS 6.2/Windows 3.1 Bundle £99
- 4Mb SIMM RAM for 0Mb cards £149

Ultimate Expansion
- Ultimate Expansion – A5000 £39
- Ultimate Expansion – A3000 £39
- Ultimate Expansion – A3010 £41
- Ultimate Expansion – A3020 £38
- SCSI uPodule £69
- Vision Digitiser uPodule £99
- Analogue uPodule £29
- Serial Port uPodule £49
- MIDI uPodule £49
- Scanlight 256 uPodule £229
- PSU Kit for Ultimate Exp. £30

(please call for pricing of above cards with IDE hard drives fitted)

I/O Cards
- A3000 User Port/MIDI card £44
- A3000 Analogue/User card £35
- I/O Podule - User/Ana/1MHz £79
- Archi Analogue/User card £49

Miscellaneous
- Floating Point Accelerator – A5000 £99
- MIDI Expansion card £85
- MEMC1A Upgrade £25
- 4 Podule Backplane £22
- Fan for Backplane £7
- Arc to BBC Serial Link £16
- Archi 906 Tablet (OS 2 only) £105
- Archi 1212 Tablet (OS 2 only) £199
- A3000 Serial Upgrade £19
- Laser Direct Hi-Res 4ppm £799
- Laser Direct Hi-Res 8ppm £1099

Archi Hand Scanner
Watford's MKII Hand Scanner for the Archimedes and A3000 has a maximum resolution of 400dpi, and a scan width of 4". Features include: cropping and scaling images, X flip and Y flip, and edge detection.
- A300/A400/A5000 version £89
- A3000 external version £109
- v1.10 ROM Upgrade £20

Upgrade to A4 Scanner
For existing users of the Watford MK2 Hand Scanner we can offer you an upgrade to the A4 Scanner for only **£129**

Archi A4 Scanner



The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, etc, with its detachable sheet feeder, or used as an A4 wide hand scanner. 64 grey levels are produced from the scanner at resolutions up to 400dpi.
- A4 Scanner for A300/A400 £199
- A4 Scanner for A3000 £229
- Sheet Feeder for A4 Scanner £69

Disc Controllers
- External Floppy Disc Interface £10
- Backplate/Lead for above £9
- 8-bit SCSI card £129
- 16-bit SCSI card £149
- 16-bit SCSI card - 16Kb cache £169
- 16-bit SCSI card – Acorn £249
- ST506 Hard Disc podule £49
- 16-bit IDE interface - A300/A400 £59
- 8-bit IDE interface - A3000 internal £89

Graphics Cards
- Colour Card Gold £239
- Chroma 500 Genlock card £419
- Chroma 150 PAL Encoder £169
- Chroma Genlock card £209
- Hawk V9 MKII Digitiser £189
- Eagle M2 Multimedia card £319
- Vision Colour Digitiser £99
- HiVision Colour Digitiser £149

Archi Mk4 Mouse
The new Mk4 mouse for your Archimedes is the ideal replacement for your old worn out Acorn mouse. The sleek design makes the mouse a pleasure to handle, and it also looks nice on your desktop.

only £24

ArcLaser Printers
This range of direct-drive laser printers for the Archimedes gives excellent high speed printing. Models available range from 300dpi A4 size to 1200dpi A3 size.
- ArcLaser A4 1200dpi £985
- ArcLaser A3 1200dpi £4995

Scanners
- Scanlight 256 – A300/400 £188
- Scanlight 256 – A3000 £198
- Scanlight Professional £549
- Scanlight Video 256 £199

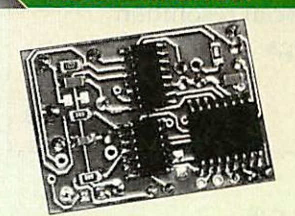
Networking
- Econet Interface – all models £49
- Ethernet Interface III – A5000 £149
- Ethernet interface – RiscPC £99
- Acorn Access – A3000 £145
- Acorn Access – A3020 £145
- Acorn Access – A5000 £145
- Acorn Access – RiscPC £119
- Accord P/P Networking – A3000 £145
- Accord P/P Networking – A3020 £149
- Accord P/P Networking – A5000 £145
- EtherLAN Card – A3000 (BNC) £131
- EtherLAN Card – A3020 (BNC) £143
- EtherLAN Card – A5000 (BNC) £131
- EtherLAN Card – A3000 (BNC/TP) £131
- EtherLAN Card – A3020 (BNC/TP) £148
- EtherLAN Card – A5000 (BNC/TP) £131
- EtherLAN Card – RiscPC (BNC/TP) £113
- 12 port UTP Ethernet Hub £299

Ethernet Cabling

Length	Thinnet	Twisted Pair
1m	£2.50	£2.00
3m	£4.50	£2.75
5m	£6.50	£3.25
10m	£9.50	£5.25

Fax/Modem Bundle
Now you can use your Archimedes computer as a fax machine. Prepare a fax, send it using the ArcFax software. Receiving a fax is simple - display on the screen or print out on any RISC OS printer.
- Fax/Modem with ArcFax software £149

VIDC Enhancer



The Watford VIDC Enhancer for the Archimedes 300/400 and A3000 computers, caters for all types of Multiscan and VGA monitors.
- Multiscan VIDC Enhancer £15
- SuperVGA VIDC Enhancer £29

CD-ROM Drives



Aries CD-ROM Drive for RiscPC
The ideal CD-ROM drive for the RiscPC. The drive is available with or without 16-bit SCSI card, and can be installed in a matter of minutes.
- Aries CD-ROM Upgrade for Risc PC £275
- Aries CD-ROM drive only £145

Cumana CD-ROM Drives
Enter the world of Multimedia on this Arc with the Cumana range of CD-ROM drives and accessories.

300 Series – low cost drive
- 300 CD-ROM Drive/Interface £339
- 300 CD-ROM Pack 1 £424
- 300 CD-ROM Pack 2 £509

600 Series – SCSI drive
- 600 CD-ROM Drive/Interface £509
- 600 CD-ROM Pack 3 £594
- 600 CD-ROM Pack 4 £680

CD-ROM Packs include Drive, Interface, Cables, Stereo Speakers and some CDs

Pioneer CD-ROM Drives
A new range of SCSI CD-ROM drives which accept 8 discs at the same time.
- DRM502X Dual Speed CD drive £499
- DRM504X Quad Speed CD drive £999

Acorn Multimedia Expansion
Styled to match the A4000 and A5000 this unit will fit neatly on top.
- Multimedia Expansion £485
- Multimedia Expansion – 16bit £685
- Multimedia Expansion – 8bit £585

HCCS Ultimate CD-ROM Drive
A dual speed CD-ROM drive supplied complete with Interface.
- Ultimate CD-ROM for A300/A400 £289
- Ultimate CD-ROM for A3000 £289
- Ultimate CD-ROM for Ultimate Exp £289

CD-ROM Software
- Artworks £129
- Artworks Clip Art £18
- British Birds £150
- Castles £40
- Countries of the World £40
- CD – 4 Disc Set £149
- CD Francais £120
- Creepy Crawlies £90
- Dictionary of Living World £175
- Dinosaurs £124
- Frontier 2000CD £125
- Grooves £90
- Hutchinson Encyclopaedia £49
- Illustrated Holy Bible £23
- Illustrated Shakespeare £23
- Image Warehouse £53
- Revelation II £99
- Sherlock Holmes £23
- Space Encyclopaedia £57
- Really Useful CD v1 £47
- Really Useful CD v2 £47
- Times & Sunday Times £195
- Tekkie CD £99
- Pro Artisan v2 £129

Archi Accessories
- A3000/A3010 Keyboard Dustcover £5
- A3000 Combined Dustcover £9
- A300/400 Dustcover £9
- Archi Keyboard only Dustcover £5
- A5000 Dustcover £9
- 14" Monitor Dustcover £6
- Perspex Keyboard Cover £8
- A3000 Monitor Stand (WE) £15
- A3000 Podule Case £15
- A3000 Carry Case £10
- A4 Notebook Carry Case £35
- A4 Notebook Battery Pack £49
- Archi Keyboard Extension Lead £8
- Quest Trackerball £25
- Voltmace Delta Cat Joystick £25

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588





Imagine....



A 2400dpi* colour flatbed scanner for the Archimedes or RiscPC for under £800. With true colour capabilities (16.7 million), we are sure you'll agree that it's an offer you can't afford to ignore.

Having brought you the most innovative handscanner back in 1992, we thought it was time to do it again. Following their success in the PC field, we introduce the award winning Aries Relisys flatbed scanners for the Acorn Archimedes and RiscPC. When you see the remarkably affordable price, you'll be sure to want one.

ISO-9001 Manufactured to BSI Quality Standard Certificate

With the Aries Relisys scanner you'll open up a whole new world of possibilities. Imagine being able to scan a whole A4 size picture and in true colour. If you don't want the whole image, simply select the required area and scan again - the software will capture only what you want to see.

The Aries Relisys scanner is the perfect answer for anyone involved in desktop publishing (DTP) work that requires the ability to import graphic images easily, or import text via Optical Character Recognition (OCR) software.

With the firmware interpolation they produce outstanding quality scans (up to 2400dpi*) and either 256 greyscales or 16.7 million colours.

The scanners are amazingly fast too. With a standrad SCSI II interface**, they can scan a whole A5 page in 15 seconds (mono) and in minutes (24-bit colour).

An optional 50 page document feeder is available for scanning long documents, and an adaptor to get the best results when scanning transparencies.

* Resolution quoted is the maximum achievable using interpolation.
** SCSI controller required.

FREE Software

All Aries Relisys scanners come supplied with connecting cable, TWAIN driver and a copy of ImageMaster scanning software.

Software Features:

- Scan size not limited to RAM – images are saved directly to hard disc.
- Industry standard files supported – TIFF, JPEG, PCX, PBM, BMP, GIF and Sprite.
- TWAIN compliant.
- Scan type selectable from monochrome up to 16.7 million colours (24bpp).
- Advanced image processing tools/filters.
- Edit, rotate, shear, crop & flip images.
- Alter colour resolution of scanned image.

Scan256 Pro – 256 Greyscale A4 Scanner

- Single pass 256 greyscale scanner
- 8.5" x 14" scanning area
- 2400dpi x 2400dpi maximum scan resolution*
- 256 brightness/contrast settings
- SCSI II interface

Introductory Offer Price **£499**

ScanColour Pro – Colour A4 Scanner

- Single pass 16.7 million colour scanner
- 8.5" x 14" scanning area
- 2400dpi x 2400dpi maximum scan resolution*
- 256 brightness/contrast settings
- SCSI II interface

Introductory Offer Price **£799**

Optional Accessories:

EcoSCSI Interface	£35
16-bit SCSI Interface	£129
Document Feeder	£259
Transparency Adaptor	£295
Sleuth OCR software	£43

Educational Discounts

Please call 0582 745555 for details

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588






Archimedes Software

Desktop Publishing

- Impression Publisher £109

Impression Publisher

Impression Publisher is the latest version of the highly acclaimed document processing software for the Archimedes and RiscPC. Publisher can be your work processor. It is also excellent at handling large documents, even books. It's ideal for producing adverts, brochures and the most complex page layout tasks, and at a remarkable price.

Special Offer Price £109

- Impression Publisher OPI £159
- Impression Style £69
- Impression II Business Supplement £29
- Impression II Borders Disc £10
- Ovation £79

DTP Utilities

- CC Graphics Loaders £35
- Desktop Thesaurus £15
- Equasor £32
- Spellmaster £25
- Sleuth OCR £43
- Type Studio £35
- Optical OCR £POA

Word Processors

- DeskEdit 3 £21
- Data Word £14
- Easiwriter 3 £115
- Easiword Plus £38
- Pendown £45
- Pendown Plus £65
- Pendown Etolles £45
- Primeword £42
- Wordz £75

Spreadsheets

- Advantage £39
- Eureka £92
- ProSheet £28
- Resultz £87
- Schema 2 £95

Databases

- Flexifile £18
- Genesis Project £49
- Genesis Professional £119
- Insight £57
- Knowledge Organiser 2 £70
- Masterfile 3 £39
- Multistore v2 £78
- Pinpoint 2 £82
- Junior Pinpoint £24
- Pinpoint Datafiles £
- Recordz TBA
- S-Base Personal v2 £99
- S-Base Developer v2 £189

Integrated Packages

- Advance £79
- Desktop Office £48
- Pipedream 3 £69
- Pipedream 4 £90
- Fireworks £124

Languages

- Desktop Assembler £99
- Desktop C £151
- PC Bolt £89
- Control Logo £21
- Easy C £43
- Logotron Logo £57
- Risc BASIC Compiler v9.0 £59
- Risc FORTH Compiler £59
- Robo Logo v1.1 £29

Site Licences

- Advance Primary Licence £181
- Advance Secondary Licence £440
- Artworks £540
- Impression Style £495
- Impression Publisher £540
- Pinpoint 2 879
- Pipedream 4 £695

Communications

- ArcTerm 7 £58
- Hearsay 2 £59
- Arc Fax £34

Graphics

- Artisan 2 £43
- Autosketch II £89
- ArcTist £15
- Atelier £23
- Artworks £99
- Chartwell £22
- Craftshop 1 £18
- Craftshop 2 £18
- Euclid 2 £58
- Film Maker v5.1 £47
- GraphBox £36
- GraphBox Professional £65
- Illusionist £37
- Image Animator £58
- Kid Pix £32
- Plot £59
- Poster £63
- Presenter GTI £55
- PrimeArt £42
- Pro Artisan 2 £95
- ProArt 24 £125

ProArt 24

ProArt is the latest addition to Clares' range of graphics packages. Written for the RiscPC, this powerful software takes advantage of the machines 24-bit colour capabilities and more.

Special Offer Price £125

- Render Bender 2 £37
- Rephorm £42
- Revelation 2 £69
- Revelation Image Pro £99
- Solids Render v5.1 £59
- Titler £105

CAD

- Arc PCB v1.8 £72
- Arc PCB Schematics v3.2 £151
- Arc PCB Professional v5.1 £203
- CADet £95
- SolidCAD v5.1 £62
- SolidTools v5.1 £154
- PowerRouter £43
- Excellon Drill £43
- Oak Parametric Design Tool £149
- WordCAD £59

Business

- Business Accounts System £259
- Business Account Modules £79
- Payroll Manager v2.0 £59
- Prophet Accounts £129
- Personal Accounts £
- Home Accounts £24
- Financial Accountant £175
- Shareholder Professional £115
- Micro Trader System £275
- Micro Trader Modules £75
- PlanING £95
- ProjectING £289

Music & Speech

- Rhapsody 2 £45
- Rhapsody 3 £72
- Notate £59
- ArcTIculate £17
- Armadeus £59
- Vox Box £45
- Score Draw £45
- AudioWorks £30
- Speech! £18

Printer Drivers

- Expression PS £18
- Star/Citizen Colour Driver - OS 2 £10
- DeskJet Colour Driver £10
- Epson JX Colour Driver - OS 2 £10
- !Printers v1.22 Upgrade - OS 3 only £5
- Canon BJ/BJC600 TurboDriver £39
- HP DeskJet/Laser Jet Turbo Driver £39
- Epson Stylue TurboDriver £39
- Show Page £139
- Repro £42
- SuperPlot £10
- SuperDump £10

Networking

- AUN/Level 4 Fileserver Rel. 8 £859
- TCP/IP Protocol Suite - Single User £99
- TCP/IP Protocol Suite - Site Licence £399

Games

- Adventures of Sylvia Lane £18
- Air Supremacy £13
- Black Angel £22
- Break 147 & Superproof £22
- Birds of War £22
- Battle Chess £17
- Cyber Chess £18
- Carnage inc. £15
- Crystal Maze £24
- Chess 3D £18
- Chocks Away Compendium £18
- Chuck Rock £14
- Cycloids £14
- Diggers £18
- Dungeon £16
- E-Type Compendium £15
- Elite £29
- Ego: Repton 4 £13
- F.R.E.D. £14
- Fervour £18
- Grievous Bodily Arm £15
- Gods £15
- Games Wizard £17
- Holed Out Compendium £18
- Haunted House £18
- Hero Quest £18
- Heimdall £18
- Ixion £14
- James Pond £15
- James Pond 2 - Robocod £16
- Lemmings £14
- Lemmings 2 - Tribes £18
- Lotus Turbo Challenge II £16
- Magic Pockets £17
- Manchester United £8
- Manchester United Europe £18
- Mah Jong Patience £15
- Nebulus £14
- Oh No! More Lemmings £12
- Omar Sharife Bridge £15
- Premier Manager £17
- Play It Again Sam 1 £18
- Play It Again Sam 2 £18
- Play It Again Sam 3 £18
- Populous £18
- Real McCoy 2 £20
- Real McCoy 3 £20
- Real McCoy 4 £20
- Repton 3 £13
- Striker £17
- Superior Golf £18
- Saloon Cars Deluxe £20
- Sensible Soccer £13
- Sim City £15
- Stunt Racer 2000 £18
- SWIV £8
- Technodream £18
- Virtual Golf £18
- Warlocks £22
- Xenon 2 £17
- Zool £15

Miscellaneous

- Investigator 3 £43
- DFS Reader £5
- Compression £32
- Gerber Plot £43
- Touchtype £39
- Hard Disc Companion 2 £39
- Oak Logic £69
- Ancestry £42
- Time Tabler £469
- RISC OS 2 SID Utilities Discs £10
- Concept Keyboard Designer £20
- File Handling for All Disc £4
- WIMP Programming for All Disc £4
- ImageMaster Scanner software £30
- Time Tabler £469

CLEARANCE OFFERS

We have a number of software titles on offer, at **£15.00** each, while stocks last. Please call for availability.

- **Acorn Desktop Publisher**
- **First Word Plus Rel. 2**
- **Clares Graphic Writer**
- **Desktop Folio DTP**
- **Investogator II**
- **PC Emulator v1.7**
- **Genesis Plus**

Educational

- 10 out of 10 English £15
- 10 out of 10 French £15
- 10 out of 10 Dinosaurs £15
- 10 out of 10 Driving Test £15
- 10 out of 10 Number £15
- 10 out of 10 Statistics £15
- 10 out of 10 Algebra £15
- 10 out of 10 Early Essentials £15
- 10 out of 10 Junior Essentials £15
- 10 out of 10 Structured Spelling £15
- Arcventure I – Romans £24
- Arcventure II – Egyptians £24
- Arcventure III – Vikings £24
- Arcventure I, II & III Bundle £68
- Around the World in 80 Days £29
- An Eye for Spelling £31
- Animated Alphabet £16
- Animated Numbers £16
- Aztecs £32
- Badger Trails £32
- Best Four Adventure £31
- Best Four Language £31
- Best Four Maths £31
- Bookstore – Primary £33
- Bookstore –Secondary £52
- Britain since 1930 £29
- Bumper Disc 1 £16
- Bumper Disc 2 £16
- Crystal Rain Forest £31
- Dream Time £16
- Export, Trade and Industry £34
- Farm £15
- Fun School 3 RED - Under 5s £15
- Fun School 3 GREEN - 5 to 7s £15
- Fun School 3 BLUE - Over 7s £15
- Fun School 4 RED - Under 5s £15
- Fun School 4 BIUE - Over 7s £15
- Fleet Street Phantom £22
- Geordie Racer - Look & Read £21
- House of Numbers £20
- Investigating Maths £32
- Landmarks – World War II £21
- Landmarks – Egypt £21
- Landmarks – Rainforest £21
- Landmarks – Victorians £21
- Landmarks – Columbus £21
- Landmarks – Aztecs £21
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- Linkword – French £32
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- Magpie 2 £49
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- Through Dragon's Eye - Look & Read £21
- Topographer £59
- Viewpoints £29
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- Worst Witch £18

Books

- Archimedes Assembly Language £12
- Acorn to PC £5
- Archi Game Makers Manual £14
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- ARM Technical Data Manual £10
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- C: A Dabhand Guide 3rd Edition £15
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- RISC OS 3 First Steps £12
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- A3000 Technical Manual £28
- A5000 Technical Manual £59
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- A3010/A4000 Technical Manual £29
- RiscPC 600 Technical Manual £POA
- RiscPC OS Style Guide £10

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AMERICAN EXPRESS

Laser Printers

All Laser printers (excluding Hewlett Packard) include 12 Months On-Site maintenance

Brother HL-6	6ppm	£422
Brother HL-6V	6ppm	£463
Canon LBP-4U	4ppm	£478
Canon LBP 4i	4ppm	£480
Canon LBP-8 IV	8ppm	£920
Canon LBP-8 IIIR	8ppm	£1559
Epson EPL-5200	6ppm	£480
Epson EPL-5600	6ppm	£660
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£529
Fujitsu VM4	4ppm	£499
HP Laserjet 4L	4ppm	£462
HP Laserjet 4 ML	4ppm	£745
HP Laserjet 4P	4ppm	£716
HP Laserjet 4MP	4ppm	£975
HP Laserjet 4+	12ppm	£947
HP Laserjet 4M+	12ppm	£1270
HP Laserjet 4Si	16ppm	£2175
HP Laserjet 4Si MX	16ppm	£3259
NEC SuperScript 810	6ppm	£422
NEC S 102P	6ppm	£992
OKI OL-400ex	4ppm	£379
OKI OL-410ex	4ppm	£515
OKI OL- 850 PS	8ppm	£770
Panasonic KX-P4400	4ppm	£360
Panasonic KX-P4410*	5ppm	£360
Panasonic KX-P4430*	5ppm	£496
Panasonic KX-P4440	10ppm	£775
Panasonic KX-P5400	4ppm	£599
Star LS-5	5ppm	£365
Star LS-5 EX	5ppm	£499
Star LS-5 TT	5ppm	£530

*2 years on-site warranty

Laser RAM Upgrades

Type	1M	2M	4M	8M
Canon LBP-4+	£139	–	–	–
Canon LBP-4i	£109	–	£279	–
Canon LBP-8 IV	£119	–	£299	–
EPL-4100/4300	£70	£110	£205	–
EPL-5200/5800	£58	£115	£215	–
Fujitsu VM600/VM4	£57	£85	£149	£299
Fujitsu VM800	£115	–	–	–
HP III/IIIP/IIID	£75	£115	£135	–
HP II/IID	£75	£115	£135	–
HP IIISI	£57	£85	£158	£299
HP 4/4M/4P/4MP	£85	£85	£149	£299
HP 4L/4ML	£75	–	–	–
KX-P4410/4430	£129	£199	–	–
KX-P4420/4450i	£75	£115	£135	–
KX-P4400/5400	£89	£139	£229	–
OKI OL400e	£89	£118	–	–
Star LP-8	£138	£225	–	–
Star LS-5	£75	–	–	–

Laser Consumables

Type	Toner	Drum	Dev
Canon/Star 4s	£48	–	–
Canon LBP-8 IV	£70	–	–
Canon LBP-8 III	£52	–	–
Canon LBP-4U	£52	–	–
EPL-4100/4300	£83	£89	–
EPL-5200	£85	–	–
EPL-7500	£177	–	–
Fujitsu VM600	£85	–	–
Fujitsu VM800	£115	–	–
Fujitsu VM4	£29	£149	£89
HP III/IIID	£52	–	–
HP IIIP/IIP	£48	–	–
HP IIISi/4Si	£95	–	–
HP 4/4M/4P/4MP	£70	–	–
HP 4L/4ML	£45	–	–
NEC 610	£85	–	–
NEC S60/S62P	£89	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400s	£17	£129	–
KX-P4410/30	£27	£109	£109
KX-P4420	£22	£80	£59
KX-P4450/51/55	£19	£99	£79
KX-P4400/5400	£32	£69	–
Qume Crystalprint	£99	£189	–
Star LS-5	£83	–	–

Laser Accessories

JetPage Postscript Cartridge - IIP/IIIP	£225
Postscript Upgrade for LaserJet 4	£270
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lower Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for LaserJet 4	£199
LaserJet Font Cartridges	from £45
LaserJet III FX/IBM Emulation Cart.	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for LaserJet 4P	£85
Postscript Upgrade for LaserJet 4P	£225

9pin Matrix Printers

Citizen Swift 90	80col	£115
Citizen Swift 90C	80col	£122
Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£109
Epson LX100	80col	£109
Epson LX400	80col	£91
Epson LX850+	80col	£134
Epson LX1050	132col	£174
Epson FX870	80col	£226
Epson FX1170	132col	£284
Epson DFX5000C	132col	£1095
Pansonic KX-P1150	80col	£89
Panasonic KX-P1695	132col	£287
Star LC15	132col	£178
Star LC100C	80col	£89
Star ZA200	80col	£255
Star ZA250	132col	£315

24pin Matrix Printers

Citizen ABC Mono	80col	£115
Citizen ABC Colour	80col	£135
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 240 Mono	80col	£185
Citizen Swift 240 Colour	80col	£165
Citizen Swift 24X	132col	£235
Epson LQ100	80col	£118
Epson LQ150 Colour	80col	£159
Epson LQ570+	80col	£188
Epson LQ870	80col	£353
Epson LQ1070	132col	£283
Epson LQ1170+	132col	£407
Epson LQ2550	132col	£879
NEC P20	80col	£134
NEC P30	132col	£236
NEC P320	132col	£245
NEC P620	80col	£337
NEC P72	132col	£386
NEC P90	132col	£582
Panasonic KX-P2023	80col	£109
Panasonic KX-P2123	80col	£126
Panasonic KX-P2124	80col	£208
Panasonic KX-P1624	132col	£210
Panasonic KX-P2624	132col	£255
Star LC24-20 II	80col	£113
Star LC24-15 II	132col	£235
Star LC24-30C	80col	£148
Star LC24-100	80col	£95
Star LC24-300C	80col	£178
Star XB24-200C	80col	£315
Star XB24-250C	132col	£385

Ribbons/Ink Cartridges

Type	Black	Colour
Canon BJ10ex/BJ10sx	£15	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC600	£6	£8
Canon BJC800	£16	£22
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£13
Citizen Swift 24X	£8	£18
Epson LX400/LX850/FX870	£4	–
Epson LX100	£4	–
Epson LX1050/FX1170	£5	–
Epson LQ100	£4	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£23	–
Epson Stylus 300	£10	–
Epson Stylus 800/1000	£10	–
Epson Stylus Colour	£14	£29
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£14	–
HP DeskJet High Capacity	£30	£21
HP DeskJet 310	£13	£21
HP DeskJet 1200	£22	£26
HP PaintJet	£17	£27
HP PaintJet XL300	£17	£19
Kaga/Taxan KP810/815	£5	–
NEC P22Q/P32Q	£8	–
NEC P60/72/P90	£8	£14
Panasonic 1150/1170/1180	£8	–
Panasonic 2180/2123/2124	£7	£15
Panasonic 1624/2624	£8	–
Star LC10/LC100	£5	£9
Star LC200	£5	£12
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	–
Star SJ144 Thermal	£18	£18

Roland Plotters

DXY1150	£575	DXY1250	£725
DXY1350	£939	DPX2800	£POA
Sketchmate A4	£335	S/Mate A3	£499

Inkjet Printers

Canon BJ10sx	80col	£141
Canon BJ200	80col	£180
Canon BJ230	132col	£241
Canon BJ300	80col	£322
Canon BJ330	132col	£372
Canon BJC600	80col	£410
Canon BJC800	132col	£1070
Canon BJC820 (Mac)	132col	£1228
Citizen ProJet II	80col	£299
Epson Stylus 300	80col	£155
Epson Stylus 800	80col	£177
Epson Stylus 1000	132col	£340
Epson SQ870	80col	£415
Epson SQ1170	132col	£580
Epson Stylus Colour	80col	£399
Fujitsu B100	80col	£145
HP DeskJet 520	80col	£186
HP DeskJet 500C	80col	£247
HP DeskJet 560C	80col	£373
HP DeskJet 310	80col	£166
HP DeskJet 310 & CSF	80col	£205
HP DeskJet 1200C	80col	£1080
HP DeskJet 1200C PS	80col	£1608
HP PaintJet XL300+	132col	£1616
HP PaintJet XL300 PS	132col	£2575
HP DeskWriter 520 (Mac)	80col	£189
HP DeskWriter 580C (Mac)	80col	£375
Star SJ48	80col	£182
Star SJ144	80col	£286

Sheet Feeders

Canon BJ10ex/BJ10sx	£43
Canon BJ300	£88
Canon BJ330	£92
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
Fujitsu B100	£59
HP DeskJet 310	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124/1124i/2124	£79
Panasonic 1824/2824	£128
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69
Star XB24-200	£79

INKJET REFILL PACKS

Canon BJ10ex/BJ10sx - 2 pack	£12
Canon BJ10ex/BJ10sx - 5 pack	£24
Canon BJ10ex - Cart/3 Refills	£29
Canon BJ200 - Cart/3 Refills	£34
HP DeskJet Std Capacity - 2 pack	£8
HP DeskJet Hi-Capacity - 2 pack	£24
HP DeskJet Std Capacity - 5 pack	£14
HP DeskJet Hi-Capacity - 5 pack	£35
HP DeskJet Colour - Cart/4 Refills	£49

Accessories

Citizen Swift 200/240/ABC Colour Kit	£34
Canon BJ10sx Battery Pack	£33
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 256K RAM Cartridge	£45
HP DeskJet 310 Battery Pack	£33
HP DeskJet Carry Case	£49
HP DeskJet 310 Colour Kit	£28
HP DeskJet 1200 Postscript Upgrade	£499
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
HP DeskJet 310 Parallel Cable	£12
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC range	£52
Star 8K Serial Interface - XB range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9
51636G - 50 x DJ500 Transparencies	£35
51838J - 50 x DJ500 Glossy A4 Paper	£35
51630Z - 50 x DJ500 A4 Paper	£15
Appletalk Printer Cable - 2m	£12
51636G - 50 x DJ500 Transparencies	£35
Appletalk Interface for DeskJet 1200	£129
Appletalk Interface for LaserJet III	£189

HP On-site Warranty

Mono DeskJets & Deskwriters	£40
Colour DeskJets & Deskwriters	£85
4ppm LaserJets & DeskJet 1200C	£100
8ppm LaserJets	£185

Manual Printer Sharers

Standard Low Cost Sharers

Connects	Serial	Parallel
2 to 1	£8	£9
3 to 1	£11	£12
4 to 1	£15	£16
5 to 1	£POA	£POA

Professional Sharers

Connects	Serial	Parallel
2 to 1	£12	£13
3 to 1	£15	£17
4 to 1	£24	£26
5 to 1	£38	£38

Crossover Sharers

Connects	Serial	Parallel
2 in/2 out	£28	£29
4 in/2 out	–	£49

Auto Printer Sharers

Uni-Directional

Connects	Serial	Parallel
2 to 1	£27	£29
4 to 1	£44	£45
8 to 1	£75	£75

Bi-Directional

Connects	Serial	Parallel
2 to 1	£POA	£POA
4 to 1	£POA	£POA

256K Multi Spooler

These parallel Auto sharers have built-in 256K buffers.

2 in/2 out	£99	4 in/2 out	£115
8 in/1 out	£149		

Compact Converter

Serial/Parallel Converter	£32
Serial/Parallel Converter & Buffer	£POA

Printer Leads

	2m	5m	10m
PC Parallel	£4	£8	£13
25 'O' Male/Male	£4	£8	£13
25 'O' Male/Female	£5	£9	£14
Centronics D/Ended	£8	£10	£15
BBC Parallel	£6	–	–

Other standard cables available on request

Paper

500sht A4 80g Laser/Copier paper	£2.50
500sht A4 90g Laser/Inkjet paper	£5.50
500sht A4 80g Coloured paper *Pink, Green, Gold, Daffodil, Blue, Vellum*	£3.99
1000sht 9.5" x 11" Fanfold paper	£5.50
2000sht 9.5" x 11" Fanfold paper	£8
1000sht 15" x 11" Fanfold paper	£7.50
2000sht 15" x 11" Fanfold paper	£11
1000sht A4 70g Fanfold paper	£9
2000sht A4 70g Fanfold paper	£15

High Quality Paper

500 sheets A4 80gm pure white ideal for laser & inkjet printers

£5.50

Labels

On continuous fanfold sheets

1000 90mm x 38mm Single Row	£4.50
1000 90mm x 36mm Twin Row	£4.80
1000 90mm x 49mm Twin Row	£4.95
1000 102mm x 36mm Twin Row	£4.70
2400 70mm x 37mm Laser Labels	£15.25

Miscellaneous

80 column Perspex printer stand	£12
132 column Perspex printer stand	£18
80 column Professional printer stand	£15
132 column Professional printer stand	£27
Printer trolley	£39
Economy Computer Workstation	£79
Multiform Paper Feeder	£12
Professional Printer Trolley	£79
Ergo Chair	£29

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Microvitec Monitors

- Cub 3000 - 14" Medium Res for Arc £195
- Cub 1440 - 14" Multiscan for Arc £389
- Cub 1450 - 14" Multiscan for Arc £689
- Touchtec 501 for BBC £239
- Touchtec 3000 for Arc £239

Acorn Monitors

- AKF30 14" Med Res RGB £185
- AKF40 14" Med Res RGB £185
- AKF52 14" Multiscan £249
- AKF50 14" Hi Res Multiscan £299
- AKF60 14" SVGA Multiscan £319
- AKF85 17" SVGA Multiscan £989

Multiscan Monitors

- NEC 3FGe £459
- NEC 4FGe £499
- NEC 5FGe £773
- Taxan 787LR £219
- Taxan 789LR £289
- Taxan 795 Trinitron £489
- Taxan Ergovision 580LR £349
- Taxan Ergovision 685+ £619
- Taxan 875+ £729

Cables

Monitor Cables

- BBC to Philips 8833 £3.50
- BBC to Microvitec Cub £3.50
- BBC to SCART lead £7.50
- BBC to Phono lead £2.50
- BBC to UHF TV lead £2.50
- Arc to Philips 8833 Mk2 £7.50
- Arc to SCART Stereo lead £9.50
- A3010 to Philips Mk2 £7.50
- A3010 to SCART Stereo lead £9.50
- Arc to VGA Monitor adaptor £9.00
- 15pin to 15pin VGA lead £12.00
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Disc Drive Cables

- Single Disc Drive Data lead £4
- Dual Disc Drive Data lead £6
- Single Disc Drive PSU lead £3
- Dual Disc Drive PSU lead £4
- Data Duck - connect 2 drives £14
- Power Duck - connect 2 drives £8

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- M25 - Holds 25 3.5" discs £4.95
- M40 - Holds 40 3.5" discs £6.50
- M80 - Holds 80 3.5" discs £6.99
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- DLC3 - Holds 5 x 5.25" discs £1.60
- DLC4 - Holds 10 x 5.25" discs £2.00

3M Diskettes

- 10 x 5.25" D/S D/D 80T (747) £6
- 10 x 5.25" D/S H/D 1.6Mb £8
- 10 x 3.5" D/S D/D £6
- 10 x 3.5" D/S H/D £10

Disc Albums

- DW1 - Holds 6 x 3.5" discs £2.50
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- DW4 - Holds 40 discs £4.50

Bargain Corner

We have a limited number of new and refurbished items for sale at bargain prices. As this is a special offer the items have a 30 day warranty only.

- 12" Monochrome Monitors £49
- 14" RGB Colour Monitors £109
- Dot-matrix Printers from £69
- Master 512 co-processor £49
- Master 65C102 co-processor £39

Please ring or call in for availability of items.

BBC Books

- Advanced BBC User Guide £5
- Master Reference Manual Part 1 £14
- Master Reference Manual Part 2 £14
- Master Advanced Reference Manual £5
- Complete BBC User Handbook £10

Concept Keyboards

- 2010 Universal Concept Keyboard £107
- BBC User Port Cable £12
- Arc Serial Port Cable £12
- PC Serial Port Cable £12
- CK Designer software for Archi £20

BBC Master 128

We have a limited number of the original BBC Master 128 computers available at a special price.

£309

30Mb Winchester

We have a limited number of brand new 30Mb hard drives suitable for the BBC Master or BBC B/B+ with ADFS fitted.

£159

Aries IEEE Interface

An IEEE 400 parallel interface for the BBC Micro. Complete with cables and software.

£99

BBC Software

- Logotron Logo (ROM) £43
- Numerator (ROM) £39
- Pendown (ROM) £32
- View 3.0 (ROM) £45
- ViewSheet (ROM) £36
- ViewStore (ROM) £36
- ViewSpell (ROM/80T Disc) £28
- InterWord (ROM) £29
- InterSheet (ROM) £37
- InterChart (ROM) £25
- InterBase (ROM) £45
- Mega3 - Word/Chart/Sheet £69
- SpellMaster (ROM) £39
- WordAid (ROM) £20
- View Printer Driver Generator £12
- View Printer Driver (ROM) £29
- Fun School 3 Under 5s (Disc) £17
- Fun School 3 5-7yrs (Disc) £17
- Fun School 3 Over 7s (Disc) £17
- Quest Paint (ROM/Disc) £15
- ConQuest (ROM) £10
- Quest Fonts (Disc) £5
- Quest integrex 132 Driver £5
- Wapping Editor (ROM/Disc) £29
- Wapping Art (Disc) £5
- Wapping Fonts #1 (40T Disc) £7
- Wapping Fonts #2 (80T Disc) £7
- AMX Super Art (ROM/Disc) £10
- AMX Stop Press (ROM/Disc) £10
- Page Fonts for Stop Press £5
- BASIC 2 (ROM) £15

BBC Add-Ons

- 32K Shadow RAM Card £29
- 32K ROM/RAM Card £29
- 64K ROM/RAM Card £39
- 128K ROM/RAM Card £59
- Sideways ZIF Socket System £15
- 16K Static RAM for ROM/RAM £8
- 16K DRAM for ROM/RAM £10
- Battery Backup for ROM/RAM £3
- Sideways RAM Utilities Disc £5
- AMX Mouse only £15
- Quest Mouse III £15
- Quest Tracerball £20
- Mouse Mat (Red, Green or Blue) £3
- Master Twin ROM Cartridge £8
- Master Quad ROM Cartridge £12
- Data Duck £10
- Power Duck £8

Disc Filing Systems

- Watford 1772 DDFS Kit £29
- Acorn 1772 Single Density DFS £49
- Watford DFS ROM £16
- Acorn ADFS ROM Upgrade £25
- Disc Filling System Manual £5

Archi Spare Parts

- Cased Archimedes keyboard £99
- Replacement Archimedes keyboard £75
- Replacement A3000/A3010 keyboard £29
- A300/A400 Power Supply £55
- A5000 Power Supply £69
- A4000 Power Supply £59
- A3000 Power Supply £49
- 3.5" FDD for A3000/A400 £49
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- VIDC Video Controller £39
- ARM2 CPU £29
- MEMC 1A Memory Controller £25
- IOC I/O Controller £39
- 256K x 4 ZIP DRAM £6
- Fan Filter £2
- Replacement Keyboard Cable £17
- Replacement Mouse Cable £12
- Replacement Logitech Mouse Ball £7
- 1.2v NiCad Battery for A3000/A5000 £4
- AA Batteries for A300/A400 – pair £2
- Function Keystrip Holder £2
- Eject Button for A3000/A3010 FDD £3
- Loudspeaker £2

BBC Spare Parts

- BBC B Power Supply £49
- BBC B Casing £10
- BBC B Keyboard £39
- Master 128 Casing £15
- 4816 200ns DRAM £2
- OS 1.2 ROM £15
- Master 128 Keyboard £62
- Master 128 Power Supply £69
- Keyswitches £1.50
- Keytops £1
- UHF Modulator £4
- Master 128 Battery Pack £4
- Video ULA £14
- Serial ULA £14
- 6502 CPU £5
- 6522 VIA £5
- Master ULAs £15

Psion Computers

- Series 3 128K Computer £108
- Series 3 256K Computer £159
- Series 3A – 256K Computer £229
- Series 3A – 512K Computer £269

Accessories

- 128K Solid State RAM Disc £48
- 512K Solid State RAM Disc £97
- 1Mb Solid State RAM Disc £199
- 128Mb Solid State Flash Disc £30
- 258K Solid State Flash Disc £48
- 512K Solid State Flash Disc £79
- 1Mb Solid State Flash Disc £139
- 2Mb Solid State Flash Disc £199
- Parallel Interface Link £24
- Serial Interface Link – PC £58
- Mains Adaptor £12
- Professional Finance £47
- Spelling Checker/Thesaurus £39
- Spreadsheet £50

Fax Machines

- HP Fax 900 £729
- HP Fax 950 £885
- Canon 9200 £675
- Oki Fax 450 £279
- Oki Fax 1000 £910
- KX-F2300E £345
- KX-F2400E £390
- Pan UF123 £299
- Pan UF128M £385
- Pan UF312 £896

Staff Vacancies

Due to our latest expansion, we require staff to man our technical support lines for both Acorn and PC products. Applicants should be familiar with Acorn hardware and software. Also experience in repairing and maintaining computer hardware/peripherals would be an advantage as the work may be of this nature sometimes. Good rates of pay and excellent prospects.
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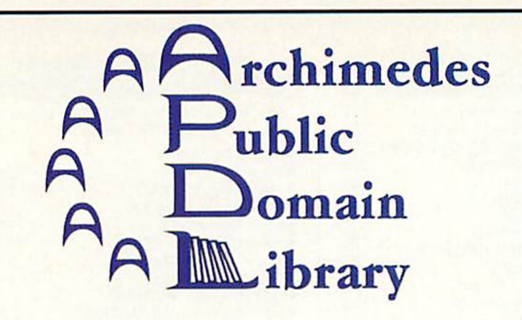
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EFF Eric
EFF Eric Italic
EFF Eric Bold
EFF Eric Bold Italic
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EFF Frederic
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Winner takes all


Lynne with her Pocket Book

Being from the South of England, it's not often I get to travel up to the beautiful landscapes of the North. Most Londoners probably wouldn't be too bothered if they never ventured past the service station nightmare that is Watford Gap, but having just been to sunny Stokesley in North Yorkshire, I'm a convert.

Stokesley is the home of eight-year-old Lynne Snape, where she shares a house with younger brother Martin, parents Allan and Sue, and an Acorn A3010. And having won the *Acorn User* Avatar Competition at the Harrogate Show, she's surrounded by loads of goodies for her computer.

Winning the competition at the Acorn User Show can transform your computer. Mark Moxon meets this year's winner, Lynne Snape, and finds one very happy Acorn fan

The Pocket Book

Given the selection of prizes that Lynne won, it's interesting that by far the favourite prize is the Acorn Pocket Book. Throughout my visit to *chez* Snape, Lynne was playing with the Pocket Book, engrossed with the word processor and spelling checker.

'Lynne is dyslexic,' explains Sue. 'That's why the spelling checker on the Pocket Book is so excellent: Lynne can spell words as she thinks they should be spelt, and if she gets it wrong the Pocket Book helps her out. She's having a wonderful time with it.

'She can also take the Pocket Book to school, which is great. The diary and alarm programs are also really interesting for her – every kid should have one!'

Then comes the acid test. 'Lynne, try spelling *take*,' says Sue.

'T', 'A' goes the keyboard. 'Erm...' says Lynne.

'Do we need a kicking k or a curly c?' asks Sue.

'Kicking k' goes the keyboard. 'That's it!' says Lynne, pressing Enter. 'Oh,' she says as the Pocket Book registers an error.

'What do you need on the end,' prompts Sue. 'The magic letter...'

'Oh yes,' says Lynne, typing 'E' on the keyboard. 'Correct' shows the screen.

Lynne's face is a picture of delight. That's what the Pocket Book is all about.

Desert island discs

In the software stakes, there are a number of packages which Lynne and family are really keen on. However, when asked about *her* favourite program, Lynne is absolutely adamant.

'The body one,' she says, referring to Sherston's excellent *Bodywise*, before launching into a detailed explanation of where the major veins lie. It's fascinating to listen to: this is a perfect example of how educational software can transform learning into a fun activity.

'It really works,' says Sue. 'The other day Lynne cut her knee, and when I asked her why her knee was hurting, she told me that it was because the nerves were carrying pain messages to the brain.'

Another hit is *StartWrite* from Icon Technology, because it's so easy to use, and also you can add the ability for the wordprocessor to talk. That really appeals to teaching Lynne to spell: if she miss-pells a word, she can *hear* the error.

Allan, Lynne's Dad, is keen on *Impression Style*. 'It's just such an impressive piece of software,' he says, using the obligatory pun, 'and I can see that when I sit down and devote more time to it, it will turn out to be even more powerful than I think it is at the moment.'

Martin, the six-year old powerhouse who has really taken to computing in a big way, has no problem when naming his favourite piece of software. '*James Pond 2*,' he says. 'And *Lemmings 2* as well. And I like the body one too, and...' Yes, we get the picture, Martin.

Another favourite is the clip art selection from the Arm Club, which they print out as an outline and colour in with pencils to create some of the prettiest birthday cards this side of psychedelia.

Also popular are *NightSky* from Clares, which is 'fascinating', and *Music Box* from Topologika, which is 'fun to play with'.

'*Haunted House* is also excellent,' says Sue. 'We can sit down in front of it for ages – it's so much easier to point at things and click than typing in cryptic phrases to move yourself around.'

It just goes to show that good software can transform the family computer from a potential dust-gatherer into a tool all the family wants to use. Throughout my visit, Martin played with *Lemmings* and *Bodywise*, and Lynne didn't put her Pocket Book down.

This is *real* IT in the home.

SUZANNE DEAKIN



At your service

James Harrison continues his look at Acorn Customer Services, and meets the team behind the support

Acorn Customer Services does not operate in a vacuum. Acorn, like many other organisations, is a company that lives on electronic mail (e-mail).

If a customer writes in with a problem which the support group cannot answer, they simply e-mail the details to the relevant product development team.

Depending on how the message is flagged – it could be marked 'extremely urgent' for example – the recipient can sort out the problem in his own time and send the answer back, all without leaving his desk.

Telephone calls interrupt the thought process. If you're trying to do some work and the telephone rings you have to drop everything, sort out the problem, and try and pick up the threads later.

Because e-mail is a non-intrusive communication system, it enables both Customer Services and other departments in Acorn to manage their time and resources a lot more effectively.

So what happens when you contact Customer Services? No matter whether it's a letter or phone call the details are entered into an Archimedes-based database.

This includes the date and time received, details about the query and which member of the team is handling it.

This 'book keeping' serves several purposes. It enables the team to see whether it's keeping to its 'reply within a week' philosophy.

It also provides Acorn with a comprehensive database of queries and problems that its users have. This is an invaluable research tool that Acorn can refer to when developing new products.

Technical people are, in general, notoriously bad at writing letters that you and I can understand. The person that's dealing with your problem will thus jot down a reply in *Edit* and save it into the correspondence database.

One of the customer information team will then translate the technical jargon into the English letter that you'll receive. The customer information team also handles all product, dealer and scheme enquiries. These queries can range from, 'My school's got 4000 Tesco vouchers, what should we get with them?' to 'Can you recommend a dealer in my area?'

During the quiet periods of the year, Customer Services has to respond to about 200 letters and 500 phone calls a week. Offers such as the Tesco promotion can triple this workload.

The knowledge base

Don't bother calling Customer Services on a Wednesday morning or after 4pm on a Friday. Wednesday mornings are used for technical briefing sessions. These involve different members of the team 'downloading' their technical expertise to their colleagues.

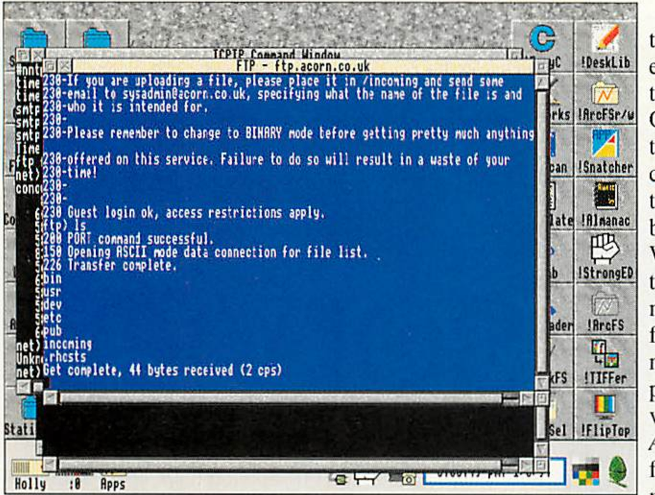
Each member of the team is a technical expert in a particular field, and the briefings allow the team members to share any information that might be of value when providing support to customers.

Friday afternoon is the debriefing session when any major problems that have come to light during the week are evaluated by the team and strategies are formulated to solve them.

Everybody in the group can also make full use of Acorn's training facilities, including attending Acorn's various Training Courses.

These training courses are open to the general public and range from 'The New Acorn Explorer', which is a course for users new to Acorn systems, to 'Component Level Servicing', covering board level repairs to the Archimedes range. Programming and networking are some of the other course topics available.

Even the customer information team members have done the module level servicing course which covers basic



Acorn has now provided an ftp site from which programs and documents can be downloaded

hardware fault finding. So when you phone up and ask them why your computer's clock isn't keeping time, or your monitor is not syncing properly, they'll be able to tell you to check the batteries or try configuring Sync to 0 or 1.

Quite a while before Acorn launches a new product, the development team responsible for that product will hold internal seminars to introduce it to different departments.

This means that by the time the product hits the street, Customer Services is intimately acquainted with every nuance of the system, and can provide full and comprehensive support for it.

Do they listen?

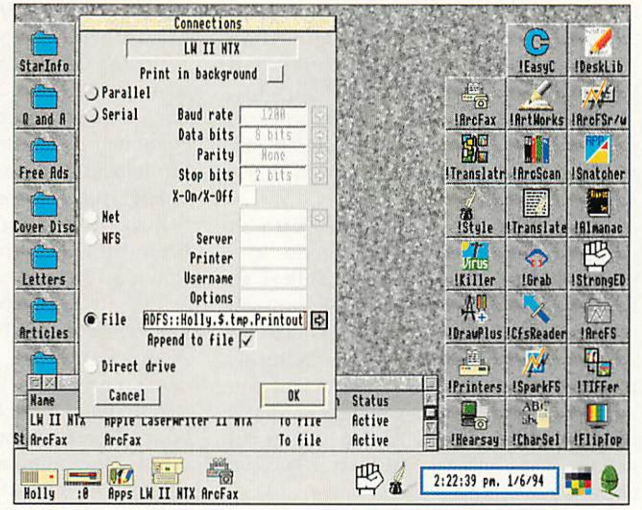
What you say to Acorn does make a difference. Customer Services plays a very important role in influencing the direction which Acorn products take.

Alastair McGregor claims that Acorn does listen to its customers, but more importantly it takes criticism very seriously.

If things are going wrong for a customer they will go on 'crusades' to try and sort out the problem. If necessary they'll even institute changes in products, mainly software, for the customer. A prime example of this is the new Printer Manager.

Fundamental changes were made to previous versions as a direct result of your comments, requests and complaints.

Alastair McGregor, the Support Services Manager, has been with Acorn for just over three years and knows the computer service and support industry intimately.



The new version 1.22 printer drivers from Acorn are a direct result of customer feedback

He believes that Acorn has an excellent future with the Risc PC and Risc OS, and that one of the reasons schools choose Acorn systems over Windows-based PCs is that Windows provides the user with a massive PTFTU factor. (Unfortunately we cannot print the expanded version of this. *Acorn User* is a family-orientated magazine.)

With regards to the Menu button on the mouse he said: 'To be able to get context-sensitive menus at any time and in any application with the single click of the mouse button is one of Risc OS's most superb features.'

The technical team

Russell Scott, one of the two 'First Line Support' people, has spent three years in Customer Services. He currently handles queries relating to Acorn's PC emulation software and hardware, including things like how to use the Psion Series 3 Serial Link with the emulator.

Like all the technical team members however, he's highly experienced in most Acorn fields.

He has also undertaken the massive task of redesigning Customer Services' internal database systems for handling all telephone and correspondence logging among other things.

If, when you contact Customer Services, you hear a strong Irish accent on the other end of the line, you can be pretty certain you're speaking to Dean Murphy. Hailing from one of Acorn's distributors, Dean is the other half of First Line Support. Dean's the man who sorts out Risc OS programming problems and is currently their Risc PC expert. He was quite pleased to say that no major Risc PC problems have manifested themselves yet, other than the fact that there are not enough of them to satisfy demand.

Peter Dunn is the crusader for embattled printer users. He joined Acorn in 1989 after spending some time at what is now Acorn's biggest consumer dealer, Beebug. Providing second line support, Peter is responsible for version 1.22 of the Printer Manager software.

He didn't write it himself, but told the programming team what you wanted, along the lines of 'write software that does what the customer wants, not what you think the customer wants'.

These changes, including background printing, better colour support and a better user interface are all a direct result of your comments, complaints and requests.

David Walker is a name you should all recognise. You've never heard of him? I'll let you in on a secret. David writes the Acorn Customer Hotline page in this very magazine.

He takes a selection of questions that Customer Services receives and fleshes them out with any other information he thinks will prove useful.

David is also the group's Unix and comms expert. He's recently set up an FTP site from which all of Customer Services' publications are now available.

Carl Sellers is the last member of the technical team. Carl is the team's networking expert. One of his new responsibilities that has come with the launch of the Risc PC is guiding schools and other network users around obstacles that can arise when networking the various incarnations of Acorn computers.

The customer information team

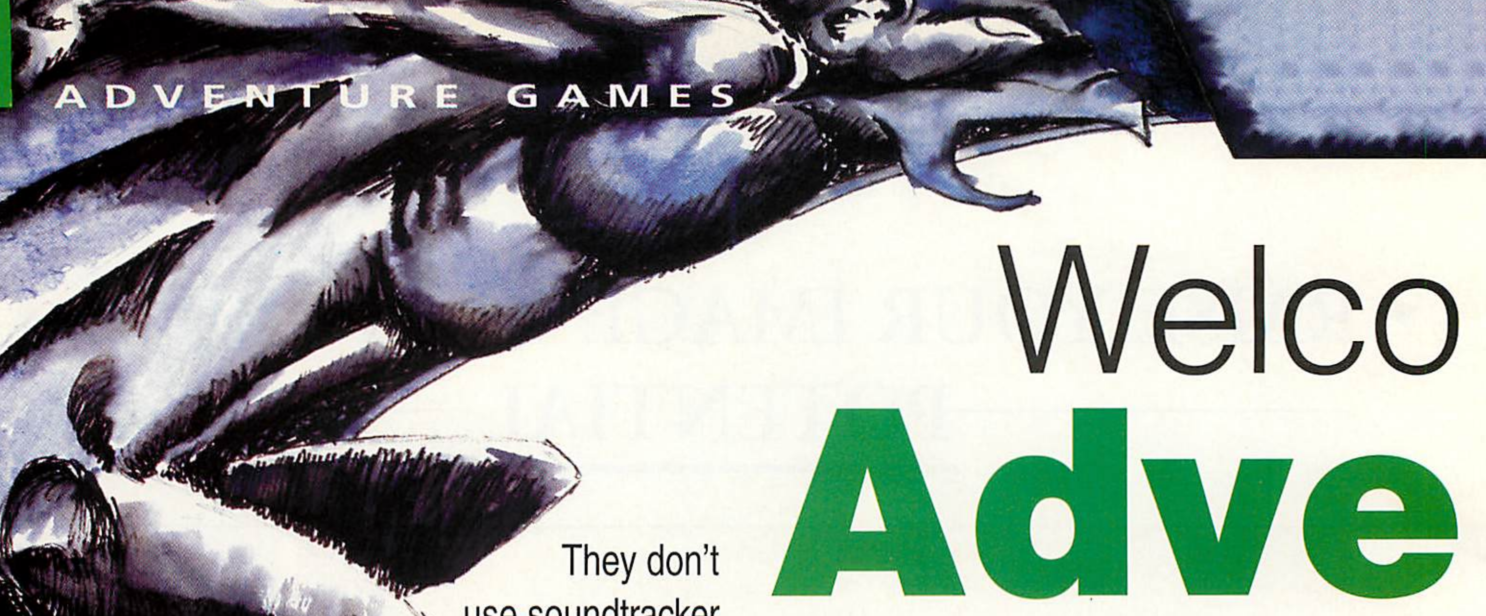
If you've got something to complain about, Kerris Poole will be the person you speak to. She's there to ensure that whatever your complaint, you'll go away happy.

Joanna Clarricoates and Vanessa Crosby are the two you'll come into contact with the most when you phone Customer Services.

They provide the front line non-technical support. If you need advice on a product, dealer or Acorn scheme, they'll probably be able to help you.

Vanessa is the newest member of the team and had never used an Acorn system before she came to the company – now she's a real whizz. Joanna handles correspondence administration, sifting through letters and allocating them to the correct technical person, ensuring you always get a response to your call or letter.

And that's the Acorn Customer Services team. Hats off to 'em: it's a thankless task.



Welco Adve

They don't use soundtracker play routines or real time light-sourced graphics, but they are popular, witty and addictive. Graham Nelson looks at the history of Adventure games

CARL FOX

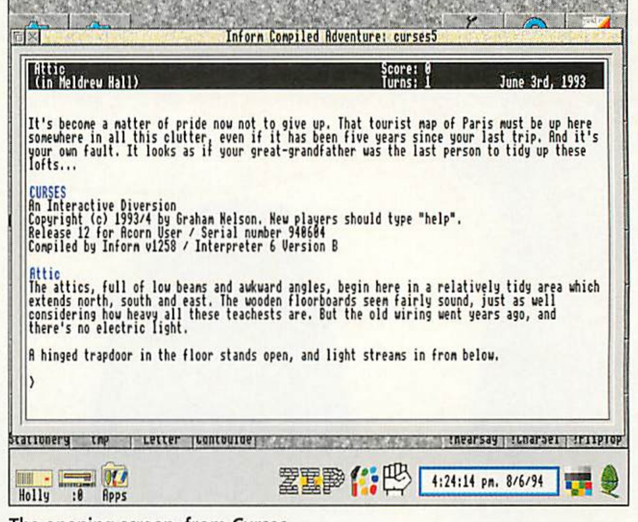
When I was a child, I sometimes played in a dark old biscuit factory taken over by Digital. The games on the mainframe were mostly easy and small, but not *Adventure*.

In the early 1970s, some Massachusetts cavers explored the Mammoth and Flint Ridge cave system, writing exotic names like 'Bedquilt', 'Colossal Cave' and 'Y2' on their map.

One of them, Willie Crowther, programmed a Fortran simulation that could be 'walked' around. Before long he and a colleague, Don Woods, filled up the labyrinth with silver bars and pearls, a rusty iron rod with a star on the end, lanterns and keys.

The caves came alive with birds, snakes and bears: *Adventure* was born. I was an addict. I wasn't the only one.

By 1977, tapes of *Adventure* were being circulated. Wherever it went it took over lunchtimes and weekends. Frustrated players disassembled the entire program to find a way out of the pirate's maze, or how to score the infamous Last Lousy Point.



The opening screen from *Curses*

The rise and fall of Infocom

Within months students at MIT were working through the night on a new game. They wrote in a weirdly powerful language (like LISP but more so), and created a much more detailed world.

Zork, running on a university PDP-10, was an instant hit with network hackers. The authors called all their programs 'zork' until they were officially released.

This one never was. A dedicated hacker broke their private security, took *Zork* to pieces and rewrote it in Fortran, so that an early version, renamed *Dungeon*, spread around the world.

The students – Marc Blank, Dave Lebling and others – had no idea they were making careers this way. In 1979-80 they formed a new company, Infocom, to give themselves a home. In its ten-year history, it never quite admitted it was purely in the adventure game business.

Infocom started with some bright people and one program: *Zork*. They invented devious tricks to squeeze it into a single 100K disc for large micros like the Tandy TRS-80 Model I. *Zork* attracted rave reviews from *Byte* magazine, and in months was selling thousands.

It wasn't all happening in Cambridge, Massachusetts. At Cambridge University, England, two research students, David Seal and Jon Thackray, devised a game assembler (still used today) and the first

Example *Adventure* game

`look`

At the End of the Road.

You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully.

`go east`

Inside the building.

You are inside a building, a well-house for a large spring. There are some keys on the ground, tasty food and a shiny brass lamp nearby. There is also an empty bottle.

`get lamp`

Taken.

`light it`

You switch the brass lantern on.

`get bottle`

Taken.

`fill bottle`

The bottle is now full of water.



me to nture

good British game. *Acheton* (1978-80) was a large and traditional adventure. Cambridge games were eventually marketed by Acornsoft for the BBC Micro.

By the early 1980s, even the tiniest tape-based micros had Adventures of their own. Memory was a huge obstacle: a fully-expanded Acorn Atom, for instance, had only 10K spare.

In America, Scott Adams' relatively crude *Adventureland* games took over the market. Here in Britain, Level 9 showed that even small games like *Snowball* (set on board a colony spaceship) could work.

Meanwhile, Infocom became a highly successful publishing firm. They hired writers as well as programmers and took enormous trouble over details.

Games came shipped with gimmicks (now much prized by collectors): comic books, invented magazines, maps and letters, stickers, scratch and sniff cards, sundials and more.

Most fans agree the best adventure ever written is Brian Moriarty's *Trinity* (1986), a dark magical fantasy mixed with the history of the atom bomb ('Trinity' was the American code-name for the first nuclear test). It was and remains the state of the art.

After a failed venture into business software, Infocom collapsed after 1988: it was bought out and then closed down by a competitor. No large company has made text games since.

Today's games are too often like *The Seventh Guest*, supplied on two 680 megabyte CD-Roms – about 20,000 times as much storage as the original *Adventure* and far less clever. But the old art of the text adventure is kept alive on the world-wide university network, just as it began.

Curses

On the cover disc is *Curses.Curses*, gradually written from 1990 onwards, contains all its own instructions – part of the challenge is to find out what to do. Since its appearance on the networks, I've received a thousand letters, from players as far away as Russia, Norway, China, South Africa and Australia.

Every time I think the game is 'finished' somebody writes to say, did I know it's possible to eat the chocolate biscuit while wearing the gas mask? So there have been over 200 repairs. Although *Curses* has been played on almost every kind of computer, it started out on my Archimedes. Now, thanks to *Acorn User*, it returns.

Finding the classics

This month's disc also includes *Adventure* – the 1977 edition. The source code will appear next month, together with my compiler *Inform*.

Zork, *Trinity* and 30 other Infocom games are available in the high street, as Activision's two volume set *The Lost Treasures of Infocom* and they are extremely good value for money. There's no Archimedes version, but this month's *Zip* interpreter will run the MS DOS version, provided you can read MS DOS discs – see the *Help* file provided with *Zip*.

Archimedes versions of *Acheton* and other fine Cambridge games are still available from Topologika. Contact Brian Kerslake, PO Box 39, Stilton, Peterborough PE7 3RL.

The overture to *Trinity*

Sharp words between the superpowers. Tanks in East Berlin. And now, reports the BBC, rumours of a satellite blackout. It's enough to spoil your continental breakfast.

But the world will have to wait. This is the last day of your $599 London Getaway Package, and you're determined to soak up as much of that authentic English ambience as you can.

So you've left the tour bus behind, ditched the camera and escaped to Hyde Park for a contemplative stroll through the Kensington Gardens Palace Gate.

A tide of perambulators surges north along the crowded Broad Walk. Shaded glades stretch away to the northeast and a hint of colour marks the western edge of the Flower Walk.

`look inside prams`

They're probably full of British babies.

Getting nowhere in *Curses*

The potting room. This light room is full of pot plants, flowers, seeds, ornamental trowels and other miscellaneous garden implements.

A pair of yellow rubber gloves hang from a hook on one wall. Aunt Jemima, who has collected varieties of daisy for years, is engaged in her regular annual pastime of deciding which species makes the best chains.

`jemima, hello`

She pretends not to have heard, a favourite ploy of hers when sulking.

`jemima, give me the gloves`

"I can't give you those, I'm using them." (this is plainly not true, but you know how it is with aunts.)

`look at jemima`

She's been fiddling about with those cut flowers all afternoon. And she's a bit upset at being left alone in the house while you're off on holiday, so best not to get on her bad side. You really ought to make it up to her somehow.



A font filing system

Hundreds of outline fonts are now available for the Archimedes and new fonts are being produced all the time. This is all very well, but it does mean that using and managing fonts is becoming increasingly difficult.

FontList
Acorn
Corpus Medium
Corpus Medium Oblique
Corpus Bold
Corpus Bold Oblique
Homerton Medium
Homerton Medium Oblique
Homerton Bold
Homerton Bold Oblique
MDA0 Medium
MDA0 Bold
MDA1 Medium
MDA1 Bold
NewHall Medium
NewHall Medium Italic

What is Font Directory?
Font Directory is a radical approach to storing and using outline fonts within the RISC OS desktop. At its heart is a dedicated font filing system which provides the user with an unparalleled level of control.*

Easy-to-use
Using techniques pioneered by LOOKsystems, Font Directory allows you to install fonts at the click of a button without the having to restart your application.

Just select the fonts in the FontList window and click on the 'tick' icon.

(If you wish, you can specify which fonts will be available on start-up and save favourite lists of fonts for later use.)

Font viewer
A preview window is available to help you decide which fonts you wish to install or just to remind you what a particular font looks like. If required, the text, size and colours used to display a font can be defined and even saved for later use.



Document scanning
The most powerful feature, however, has to be the ability to scan other applications' documents. When a document is dropped onto Font Directory, the fonts used will be made instantly available.

At last, no more 'font not found' errors!

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Rock and roll Hardware

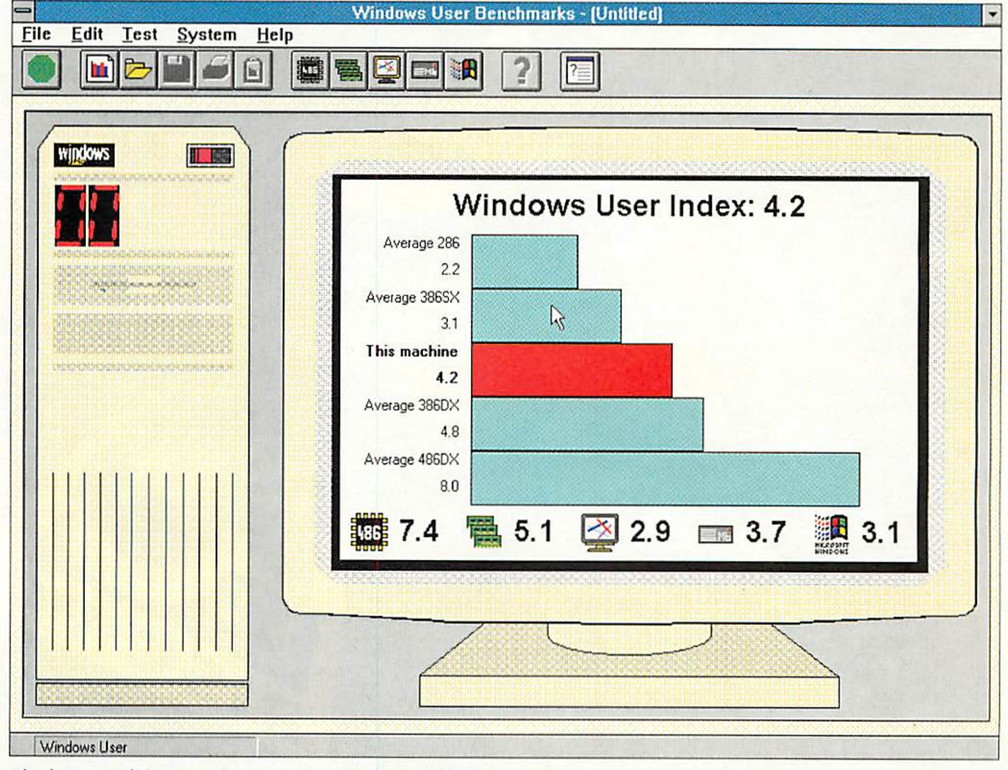
It's called Elvis because of blue suede shoes (you see Big Blue = IBM, hence IBM PC compatibility) and it's Aleph One's second go at making an Archimedes, or a Risc PC, pretend it's a PC-compatible hiding inside the Risc OS desktop.

Aleph One originally chose to rely on the Archimedes' own video circuitry for the PC Card's display.

This has some advantages such as being able to run in a Risc OS window like the Acorn PC Soft emulator.

However, getting screen data across the podule bus is slow. A fast host Archimedes, like an A5000 or A540, or at least an Arm3 upgrade in older machines is recommended. Even so, graphical performance can be very sluggish.

Aleph One has developed its Windows video driver software, which harnesses the blitting power of the Archimedes native Arm processor to accelerate selected Windows 'primitives' or regularly repeated graphical operations like moving chunks of screen memory around. The



Aleph One's Elvis PC card – somewhere in the middle for speed

Ian Burley looks at the MkII PC Card from Aleph One: the Elvis card

result has been that Aleph One can sell you a card which makes your Archimedes run PC DOS and Windows software at an acceptable pace.

With the Elvis card, Aleph One has attacked two main weaknesses of the original design.

Its memory limit has increased from 4Mb to 16Mb using a single 72-pin SIMM, the same sort the Risc PC uses.

Secondly, performance has been boosted by using a new 'clock-doubled' Cyrix 486SLC2 chip. This runs at 50MHz internally instead of 25MHz.

An option of a second local serial Com port has been added, along with connectors for a local IDE hard drive and a floppy. Both disc drive ports are only accessible by DOS and Windows programs but Aleph One is looking into ways of enabling Risc OS see these drives.

Windows driver software now supports screen modes up to SVGA 800x600 in 16 colours, with 256 colour support for Risc PC and Archimedes colour card users on the way.

Other goodies include the ability to run Microsoft Windows for WorkGroups, using the host machine's Atomwide or Ant (or Acorn Ether 3) ethernet card to link up to other PCs.

Running the *Windows User* Magazine benchmark on an Elvis card in a 25MHz A5000, the Aleph One card rated as a fast 386SX or roughly a standard speed 386DX PC. Compared to a fairly standard 25MHz Intel 486SX-based PC, the 50MHz 486SLC2 marginally won the processor test, but was left behind in the memory, hard disc and graphics tests.

Using a local IDE hard drive boosts disc performance nearly ten times – depending on the native host hard drive – but if you're running *SmartDrive* disc-cacheing software, the difference is marginalised.

In actual use the new card certainly feels more sprightly than any of the older versions I've tried. It's still slow compared to all but the most basic of modern PCs, but certainly usable.

Sluggish mouse action is a problem under Windows when the host hard drive is busy, which it often is with *SmartDrive* running. 16Mb memory boosts Windows performance and even lets you use more advanced PC operating sys-tems which require over 4Mb RAM, like IBM OS/2 or Microsoft Windows NT.

Being able to use an 800x 600 pixel screen mode is a real boon too, though 1024x766 is now common on real PCs. Doom fans will be pleased to hear the game runs just about acceptably.

The Elvis card works best in a Risc PC because the video memory bottleneck is far less severe, but is it worth buying an Elvis now when the Risc PC 486 card is promised for later this year?

You will have to wait for the native Risc PC solution and it won't have the extra interfaces seen in the Elvis card.

Then again, the Risc PC 486 should be quite a bit faster and it will be much cheaper. The choice is yours.

In brief

Two discs full of useful utilities and an application to read Sony Data Discman CD-Roms

Programmer's Utilities & Desktop Utilities 1

Supplier: The Arm Club
Tel: 071-624 9918
Fax: 081-446 3020
Price: £5 each



The Arm Club's *Command Control* – one way to fill up your icon bar

These two discs contain a number of applications which – if they are useful to you at all – will be invaluable. They are all well-written, but specialised.

The Desktop Utilities disc has two programs, *Workspace* and *Command Control*. *Workspace* creates four 'virtual' desktops which the user can switch between by clicking on one of four coloured icons on the icon bar.

Each desktop can have a different mode and palette, and windows can easily be moved between them. *Command Control* is a very useful program to give a desktop front-end to the command line. A compre-hensive set of built-in com-mands is provided, and more can easily be added.

Although this sort of thing has been done before, with Acorn's *FrontEnd* module and various PD utilities like *SetType*, *Command Control* stands out as being easy to use and to set up.

The Programmer's Utilities disc contains a set of small programs. To me, one of these is worth the cost of the disc alone: *CrashMod*. What *CrashMod* does is to cause the current application to quit when Ctrl-Alt-Delete is held down.

Under normal circumstances this is equivalent to playing Russian Roulette with your icon bar, but it will come to your rescue if you have a program stuck in an infinite loop – which happens to most of the programs I write at some point or other.

Note that on the Risc PC this module is redundant, because *Watchdog* does this automatically.

SWIStat is another fairly useful application, which shows which SWIs in which modules have been called, and how many times. This has important debugging uses, as you may want to check that your program is calling the SWIs that it is meant to, or that your module is being called.

The other programs on the disc are: a CPU load monitor, a module to help with accessing buffers, a module to provide a 'pipe' filing system for task windows, a 'stopwatch' module, a utility to search for a string in memory and a utility to provide an 'automated' prompt string.

If you can't see why you would need any of these, then you probably don't. If any of them sound useful, then I can recommend them as utilities which do their jobs well.

David Matthewman

PaperOut 2.0

Supplier: Tools GmbH
Address: Adolfstraße 5, D-53111, Bonn, Germany
Tel: +49 228 985800
Fax: +49 228 697543
Email: info@tools.de
Price: £69 or £49 for education users

PaperOut, from the German software house Tools GmbH, is an interesting multi-platform application to enable ordinary microcomputers to access information on CD-Roms compatible with the Sony Data DiscMan electronic book (EB) format.

Data DiscMan players, or EBs are like miniature portable CD-Rom players designed to use 8cm mini-CDs. Most of the best known Japanese consumer electronics names now produce EB players.

A single 20 gram full-size 12cm CD can contain up to 800kg of printed information occupying 15 metres of bookshelf. Even an 8-cm CD can contain a third of the data in a 12cm disc.

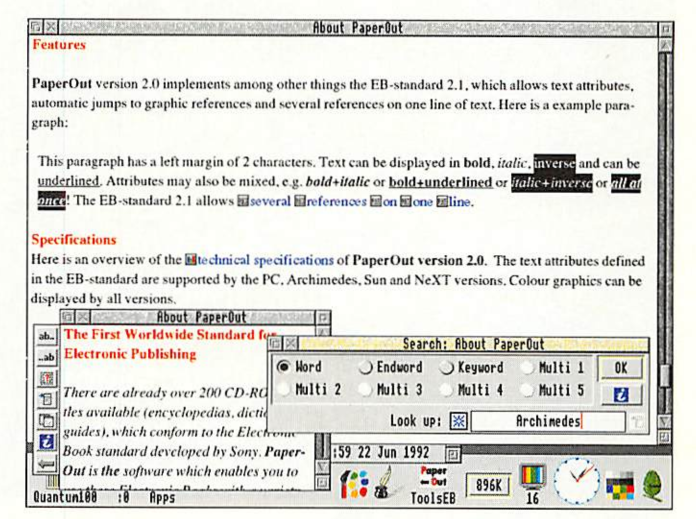
EB discs can store audio sequences and simple monochrome graphics. Tools has extended the EB book standard to include enhanced colour graphics. Now word searches can be verified with pictures and sound.

Searches can be made using part or whole words and to focus on your target text you can use a category selector to flag information which relates to a selection of information parameters. Hyper-linking of information references is also possible to help navigation.

Tools seems keen to establish a modified form of the Data Discman format as a general purpose electronic reference system for both static desktop computers, portables and EBs.

The EB format was set up by Sony for 8cm CDs but Tools has started to publish 12cm CDs as well.

The more facilities the delivery platform on your computer has, the better the sound and graphics capabilities you will be able to extract from an EB disc.



Access Sony Electronic Books with *PaperOut*

The Risc OS implementation of *PaperOut* looks nice; similar in some ways to Computer Concepts' *Word Works*, but with more powerful searching tools and hence a bit less intuitive to use.

A free Archimedes demo version of *PaperOut*, with internal demo file *EBs* is available from Tools GmbH and copies have been distributed on public domain software servers on the Internet. If Sony and Tools get their act together, *PaperOut* could ensure Risc OS users are able to participate in a forthcoming electronic book revolution.

Ian Burley

NEXT MONTH IN ACORN USER

Business special

Acorn computers are fast, efficient, powerful and have some of the most productive software available for any platform. If this sounds like the perfect computer for small businesses, you're right. In this special issue dedicated to Acorn in business, we look at a number of companies who use Acorns every day. We look at the Hong Kong Stock Exchange where Acorns are used to run the Exchange; visit Lucas who uses Acorns in the production of car parts and we get the low-down from professional graphic artists and publishers on the capabilities of their Acorn systems. If you want to be in business, don't miss the most comprehensive Acorn business study ever.

PLUS

Schema 2

If you're looking for a new spreadsheet for your Acorn, then perhaps Clares' new version of its popular *Schema* spreadsheet will fit the bill. We give you the low-down on the latest contender, and compare it to the other packages available.

Pocket Book software

The Pocket Book is a very powerful little computer in its own right, but some of the software available for it puts it into a class of its own. We look at the range of software available for the Pocket Book, from graph plotters to questionnaire compilers.

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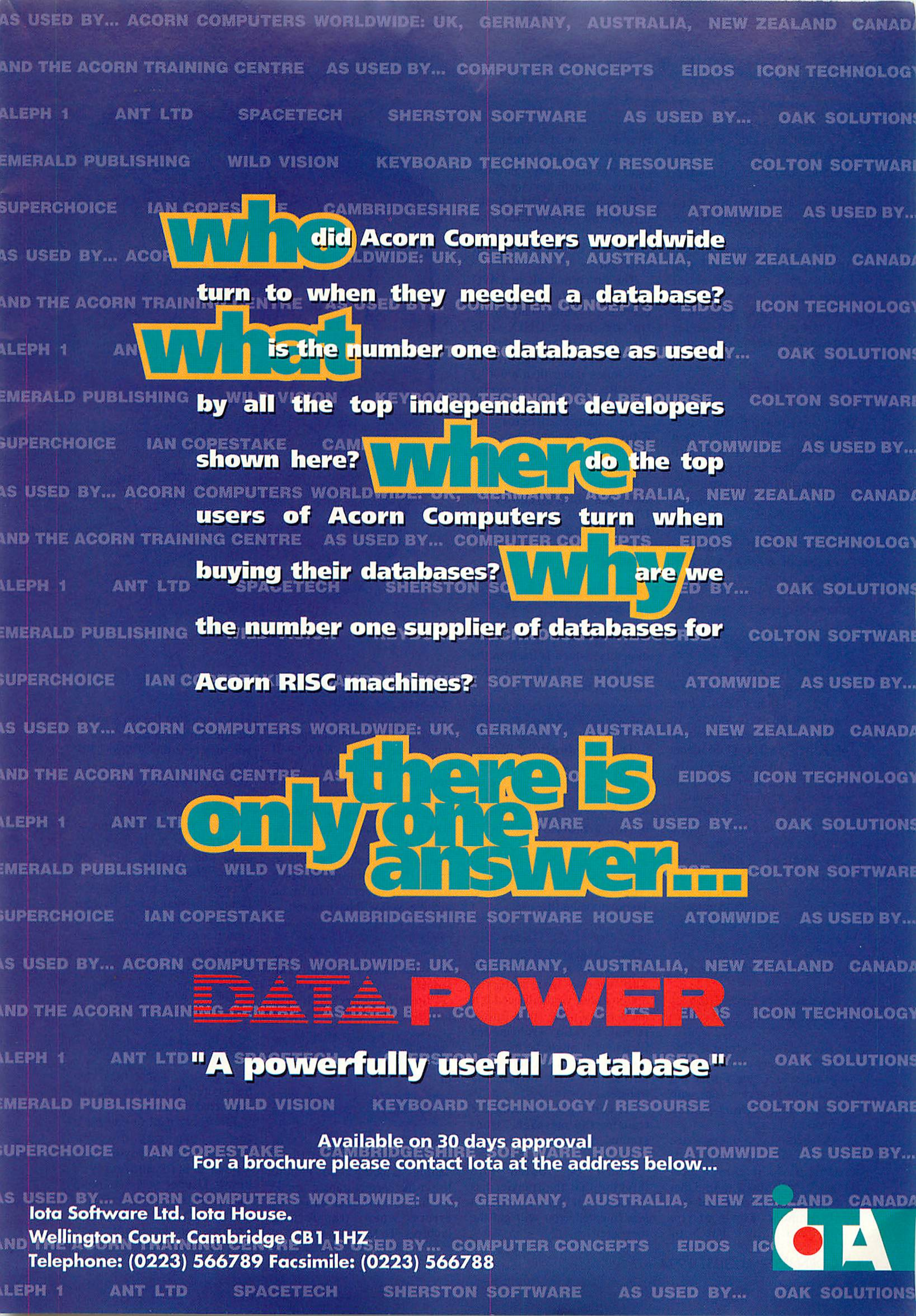
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Acorn User is published by Europress Publications Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP
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After last month's feature, I assume that all you budding surfers on the Internet have bought yourselves Demon Internet Services accounts and got *KA9Q* up and running. So where next?

There are documents on Internet to tell you all you could want to know about using it, providing you know where to look and have worked out how to transfer files to your Archimedes using *KA9Q*.

File transfer

File transfer protocol (ftp) is for this reason the most important skill to learn when using Internet. In order to transfer files from (and to) a site, you will need to type:

```
ftp <hostname>
```

in the TCPIP command window of *KA9Q*. A useful place to start is Demon's own ftp site, ftp.demon.co.uk. To access this type:

```
ftp ftp
```

as the '.demon.co.uk' will automatically be appended by *KA9Q*. A window with a blue background will appear in which – after a certain amount of activity as *KA9Q* connects to the ftp site – you will be prompted to enter both your username and your password.

Do not absent-mindedly give your Demon hostname and password in response to this. Instead – unless you actually do have a valid account on the site that you are ftp-ing to – you should enter:

```
anonymous
```

to the username prompt and:

```
myourname@yoursite.demon.
co.uk
```

to the password prompt. This slightly unlikely procedure will log you in as a 'guest' user and entitle you to access files with certain restrictions which depend on the site.

Archimedes users are familiar with the wimp environment, so it comes as a major culture shock to find that ftp works in a command line environment. Those of you who used to own BBCs or Electrons will remember typing one line comands – *cat, *dir and so on – in order to move through directories.

Pressing F12 in the desktop on the Archimedes also gets you to a command line. Using ftp is the same... but different.

The ftp commands in *KA9Q* owe a lot to the UNIX operating system. Many of the ftp sites have a UNIX-style directory hierarchy, with a slash (/) character separating directories rather than a dot (.) as in Risc OS. The Demon ftp site is no exception.

To change directory in *KA9Q*'s ftp session, type:

```
cd <directory>
```

with the root directory on UNIX systems being identified by prefixing the directory name with a slash. For example:

```
cd /pub/docs
```

would change directory to the 'docs' directory in the 'pub' directory, which is itself in the root directory. To move back a directory, use:

```
cd ..
```

To get a directory listing, type:

```
ls
```

or for a more informative listing type:

```
dir
```

To download a file, use:

```
get <ftp_site_filename>
<Arch_filename>
```

The second parameter is optional, but you will need it if the name of a file on an ftp site is not a valid Archimedes filename: it might be too long. Assuming both filenames are valid, this will initiate the transfer.

At some point during the transfer the message, 'transfer complete' will then be generated.

Don't be fooled into thinking that the transfer has finished – it hasn't. When it *has* finished, you will get the message:

```
GET complete XXXX bytes
transferred
```

If you try to interrupt an incomplete transfer, *KA9Q* will tell you the transfer is in progress and the only valid command is 'abort'.

There are two main types of files on Internet: text files and archives. The latest version of *Spark Plug* should be able to read the common archive formats. In order to transfer an archive, you will have to set:

```
type i
```

a command which can sometimes be abbreviated to 'i', 'image', 'binary' or 'b'. For text files, you need:

```
type a
```

or

```
type ascii
```

You will be told at the start of the transfer which of these settings is being used. Failure to set the correct transfer mode is the commonest cause of errors when transferring archives. To leave ftp type:

```
quit
```

Make sure that the ftp window has the input focus, otherwise you may type this at the TCPIP command window, which will cause *KA9Q* itself to quit.

News and mail

The next most useful thing to be able to do on Internet is to send and receive mail and news. The transfer of these between your machine and Demon is usually done by your *AutoExec* file on startup. The commands to start mail and news transfer are:

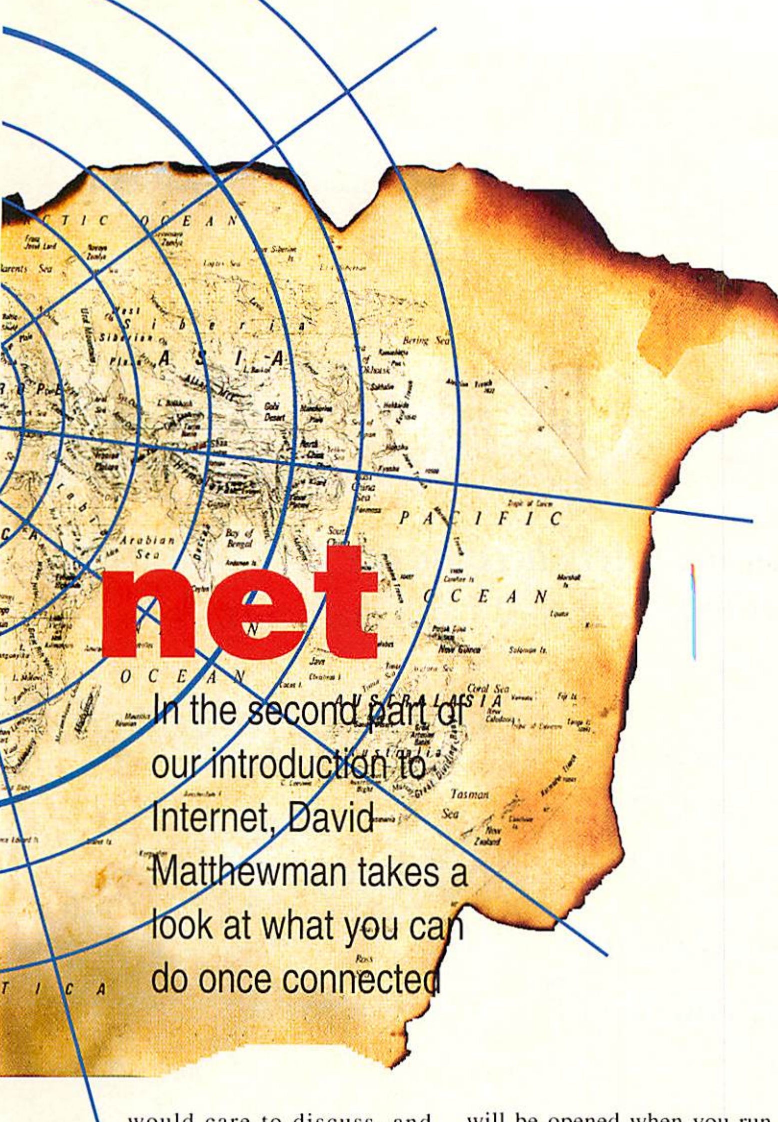
```
smtp kick
```

and

```
nntp kick Dem
```

respectively. These may also be issued from the TCPIP command window.

Electronic mail (e-mail) is a fast, cheap way of communicating with anyone else whose e-mail address you know. Usenet news is like a vast world-wide discussion group, with individual 'newsgroups' on any topic you



net

In the second part of our introduction to Internet, David Matthewman takes a look at what you can do once connected

would care to discuss, and many you wouldn't. You subscribe to those newsgroups individually, by altering your *DemGroup* file.

Mail from other users arrives in a text file with the name of the user to whom it was sent. Usernames must be valid filenames and have eight characters or less.

Mail files are stored in a directory inside *MailDir* which will be opened when you run *MailDir*. News is stored in a different *MailDir* directory, in a single file whose name depends upon the prefix chosen when you were setting up *KA9Q*, usually *DemNews*.

It is *possible* to read and reply to mail and news using a text editor, but it isn't a good idea. Ideally you need a newsreader program, either *ReadNews* or *ReaderS*.

Both of these programs split the text files into individual items, and will generate replies automatically with the correct format header.

Telnet

Telnet allows you to login directly to other computers on Internet. This is achieved in a similar manner to ftp, by typing:

```
telnet <sitemane>
```

at the TCPIP command window. As before, a blue window is opened by *KA9Q*, in which you can communicate.

You will either need an account on the computer or will need to login as a 'guest' user. However, the interface is less standard for telnet than for ftp, as it depends upon the computer you are connecting to rather than *KA9Q*.

Telnet can also be used to chat to other users online, either by telnetting directly to their site or using the Internet Relay Chat (IRC). This can be expensive on phone bills – you have been warned.

Other commands

There are a number of other useful commands which can be used from the TCPIP command window:

```
tcp status
```

will list all your various connections to Internet – news, ftp and so on – and is useful to check if any are still active before closing down.

```
?
```

will bring up a list of commands available.

```
finger <username>@<sit
name>
```

will provide information about a user at a particular site. Other uses of the finger command include,

```
finger @<sitename>
```

which will bring up a list of users at a particular site,

```
finger
<sitename>@gate.demon.
co.uk
```

which will tell you the IP address of the sitename:

```
ping <sitename>
```

sends a request for an acknowledgement to the site. Use it to check if your connection is OK by typing:

```
ping gate
```

'Gate' will reply – if you are connected – and you will be told how long the reply took.

Hopefully you now have enough information to find your way around.

Read some of the introductory files in */pub/doc* at ftp.demon.co.uk for more information. I look forward to seeing you on the 'net.

Useful sites and addresses

Ftp sites

- ftp.demon.co.uk: Contains numerous useful files. The */pub/doc* directory has files like *welcome.txt* which contains useful introductory information and *support.faq* which is a list of Frequently Asked Questions (FAQs).

  The */pub/doc/zen* directory contains the seminal tome *Zen and the Art of the Internet* which you should read, and a guide to the Internet Relay Chat (IRC) is in */pub/doc/irc*.
- micros.hensa.ac.uk or mic2.hensa.ac.uk: This is an archive of public domain software at Lancaster University. Access to non-academic sites is restricted, so use it sparingly.

  The directory */micros/arch/riscos* has the Archimedes programs; download the file *index* first to see what's available from there.

Newsgroups

- comp.sys.acorn*: The comp.sys.acorn newsgroup and its daughter groups – comp.sys.acorn.announce and so on – are useful reading for Archimedes users.
- demon.*: There are a number of Demon newsgroups, of which the most important are probably demon.announce, demon.ip.support, demon.ip.support.archimedes and demon.news. The group demon.test is an area where you can make test postings, which is useful for practice.

E-Mail addresses

- Acorn User: Our address is acornusr.demon.co.uk. You can address mail to Mark, David or any of the contributing editors at this address, like mark@acornusr.demon.co.uk.
- Acorn Computers: The customer services department at Acorn has the address customer.services@acorn.co.uk.

Telnet

- irc.demon.co.uk: This is demon's gateway to the IRC, which is a splendid way to augment your phone bill.
- password.demon.co.uk: Telnet to this to change your password.

C for Yourself

David Matthewman explains the differences between compiled and interpreted languages, and introduces the concept of libraries in the first in a new series on the C language

Welcome to the first in a series on the programming language known as C. C might well be termed the Archimedes's second language; it is certainly the next most familiar after Basic.

However, it makes its presence felt almost as strongly as Basic. Of the applications provided in Rom with Risc OS 3, half of them – *Edit*, *Draw*, *Configure* and *Paint* – are written in C.

C is a complied language, Basic an interpreted one. When a Basic program is run, the interpreter examines a line of code at a time, translating and acting upon it before examining the next line. A C program does not normally run in this way, although we did feature a C interpreter on the February 1994 cover disc.

Compilation

A C program must first be compiled as a block into machine code. The machine code itself is then run. This makes for a faster program, not only because the computer is not having to interpret the code at the same time as running the program, but also because the compiler can perform certain optimisations on the code which would not be possible if it were only seeing the code a line at a time.

There is a down side to all this, which is that the compilation itself can be time consuming. When you are trying to debug a C program, spending minutes waiting for the computer to compile code to which you have made one very simple change can be frustrating.

Fortunately, it is possible to split large programs into smaller sections, and compile them section by section. Then, the section of the program which has been changed will need to be re-compiled; the rest will not.

Once all the sections have been compiled, they are joined together by a program called a *linker*, which creates the final, executable program.

Strictly speaking, the compiler does not produce executable machine code, but *object* code. This is machine code with added 'hooks' to tell the linker how to fit it together.

The process is obviously much more complicated than 'one line at a time' interpreted Basic. First, C program fragments are *compiled* into object code files, which are *linked* into executable machine code.

Even if the C program appears to be whole and not split into fragments, it will still need to be linked with one or more of the standard C libraries if it is to do anything useful. All this will be examined in more detail later in the series, but it is important to have a general sense of what is happening.

C keywords

The language itself is relatively bare. Archimedes Basic has over 100 keywords; ANSI C has only 32. A full 19 of these are used to declare the type and scope of variables – whether a variable is an integer, whether it is local to a given program segment and so on.

Of those remaining, there are keywords associated with loops:

```
do
for
while
break
continue
```

keywords to perform conditional statements:

```
if
else
switch
case
default
```

as well as a keyword to give the size, in memory, of a variable, one to return from a procedure and lastly, that pariah among keywords:

```
goto
```

And that is it. There are no keywords to print results, none to handle files, no graphics or sound commands, not even so much as a beep. All these are handled by *library* functions – object files containing code to perform all these functions.

These files are linked with the code from your program in exactly the same way as any other object code.

Header files

Each object file – the libraries are no exception – comes with a header file which, loosely speaking, describes what each function in the object file does.

If a program segment uses a function from one object file, it includes the relevant header file before its instructions. It does this with a line of the form:

```
#include <library_name.h>
```

the exact use of which we will tackle later in the series.

This month we will look at one program, which is in the *C* directory on the cover disc. It is a very small program and will be familiar to almost anyone who has done computing in other languages. It prints up the

words 'Hello World!' The first line:

```
#include <stdio.h>
```

includes the header file for the library containing functions for input and output, including writing to the screen.

The program needs this to be able to print anything. The line:

```
int main(void)
```

marks the start of the main section of the program. 'main' is a function like any other, but it is always the function called first when the program is run, and must therefore always exist.

The word 'int' states that the function has integer 'type', and 'void' states that the function has no parameters. Strictly speaking these two words are optional, as they will be assumed if they are not present.

The braces { and } mark the start and end of the 'main' function. In this case the function is only one line long, so they may seem a bit superfluous, but normally functions are much longer than this. The printing itself is done by the line:

```
printf("Hello World!\n");
```

The '\n' inserts a new line control code when the string is printed. The syntax of the printf function – used to print to the screen – is actually a good deal more complicated than this example suggests, and we will cover it in more detail later.

In order to run *HelloWorld* you will need a C compiler. The box entitled 'C on the Arc' tells you what is available.

The first thing that the compiler will do with *HelloWorld* is run the program through a *preprocessor*. This takes all lines beginning with a '#' character and acts on them.

In *HelloWorld* the only such line is the #include line at the start of the program. The preprocessor will replace this line with a set of funtion definitions for the stdio library.

After this, the text will be passed to the *compiler*, which will turn the instructions into machine code.

This machine code, the object file, will contain a reference to a function 'printf', but will not contain the function itself.

The final stage is performed by the *linker*. This will take the object file, find any references to external procedures – printf in this case – and extract the code for them from the relevant library, which here is stdio.

The linker will then generate a fully self-contained machine code *HelloWorld* program.

You should now understand the difference between a compiled language like C and an interpreted one like Basic.

Hopefully you will also have some idea about how C programs are complied into files which are then linked to make executable machine code.

Next month, I will explain the syntax of C in more detail.

C on the Arc

There are two commercial C compilers available for the Archimedes, *Desktop C* from Acorn and *Easy C* from Risc Developments.

Desktop C produces faster code and, generally speaking, is the better compiler of the two. It comes bundled with Acorn's Desktop Development Environment (DDE), which offers powerful debugging facilities. It also costs £190 as opposed to £60 for *Easy C*.

Easy C is arguably the easier package for a beginner to use and has a built-in assembler but as yet no debugger – although one is promised. As Barry Norman says, 'You pays your money...'

The Free Software Foundation's compiler, GNU C, is available for the Archimedes and is – as you might expect from the name – free. The compiler is also very big and does not run in the desktop.

However, if you have space on your hard disc, reasonable memory in your computer and an affinity for the command line, it is worth a look.

The C language

The programming language C was developed in the mid 1970s. Its ancestor was BCPL, which begat B, a language written in 1970 for the first UNIX system. B in turn begat C.

The UNIX operating system and C are inexorably linked. UNIX is written in C, as are most UNIX applications. The UNIX C compiler is also written in C, at first sight a bizarre arrangement.

Dennis Ritchie of AT&T Bell Labs in New Jersey wrote the C language specifically to implement UNIX on the DEC PDP11, so C and UNIX really developed out of each other.

C has evolved a lot since then. Today, any computing system that wants to be taken seriously has a C compiler. As it appeared on more and more platforms, extensions were made to the original standard laid down by Brian Kernighan and Dennis Ritchie in 1978 – the standard known as Kernighan and Ritchie (K&R) C.

In 1983 the American National Standards Institute (ANSI) drew all the changes together and defined a new standard – ANSI C – which has stood ever since.

This standard not only cleared up a set of ambiguities from the first definition, but it defined a set of standard functions which a C compiler must provide in the form of a library.

This standard opened up the way for machine-independent C to be written and ported easily between compilers on different platforms, secure in the knowledge that when a program asked for a file to be opened, the compiler would sort out how do the actual opening.

QUESTIONS & ANSWERS

Fake high density discs, day to day maintenance of your computer, problems with Paint and some quick tips

Q I have heard that it is possible to format double density, 800K discs as high density 1.6M ones. Is this true? Will I have any problems if I do this?

Mark Hellings
Ampthill

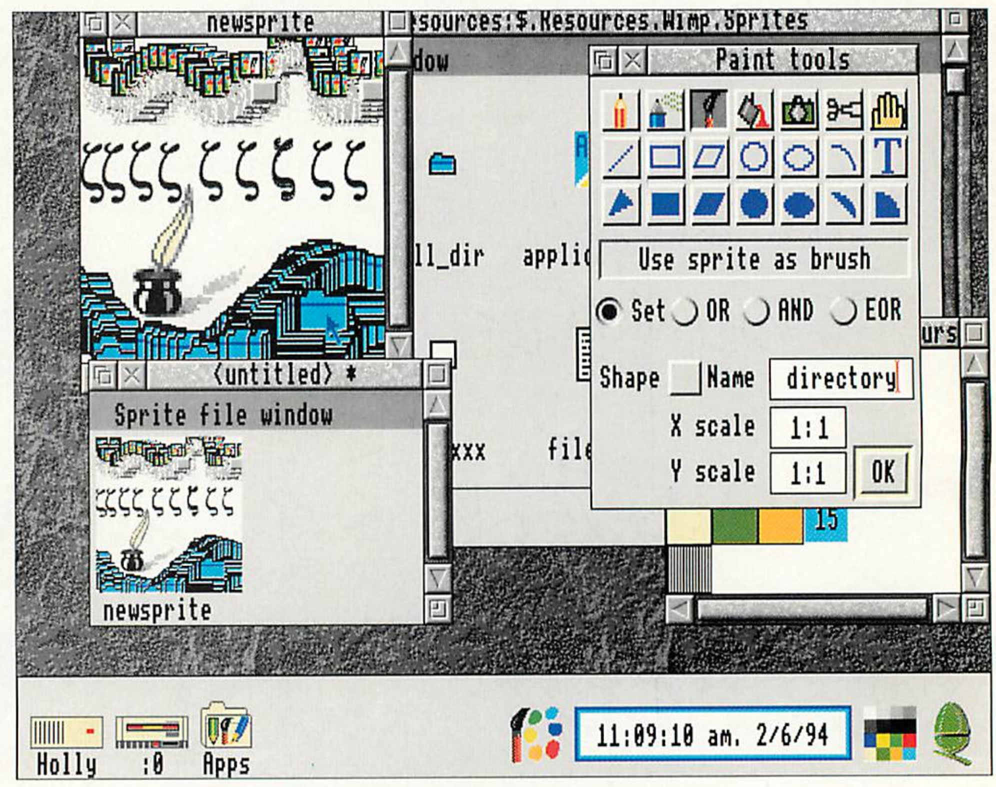
A It is certainly possible to do this. The Archimedes does not check the density of the disc before formatting it and low density discs will usually accept being formatted at the higher density.

However, high density discs have a different magnetic coating from double density discs to enable them to cope with the higher density of information.

This makes them more reliable than double density discs when formatted to 1.6M, so don't store anything precious on 1.6M-formatted double density discs.

For the same reason, high density discs should *not* be formatted to 800K and used as 'superior double density discs', as 800K disc drives may have trouble writing to them.

Furthermore, although the Archimedes doesn't check the notional density of the disc, the Macintosh does. You cannot, for instance, format an 800K disc to 1.44M IBM format and use it to transfer data to a Macintosh, as the Macintosh will refuse to read the disc.



You can use *Paint* to compose multiple images with the 'use sprite as brush' tool

Q What day-to-day maintenance can I perform on my Archimedes without sending it off to a dealer? I've heard that I should change the fan filter and batteries every year, but my A5000 doesn't seem to have either. Should I worry?

J Chambers
Stoke on Trent

A The A5000 doesn't have a fan filter, and since the fan is integral with the power supply, you couldn't get at it if it did.

Neither does it have batteries which need changing, as the CMOS Ram is backed up by a battery which recharges auto-matically when the machine is switched on.

The upgraded A300 and A400 series machines do have fan filters and batteries which need changing.

Both the fan and the batteries are at the front of the machine at the left. In order to remove the fan filter, you will have to unbolt the fan.

This would be a good time to check that the fan is drawing air into the machine rather than blowing it out – there is no point in filtering the air on the way out of the computer. If it is blowing the wrong way it can be turned round.

Replacement fan filters are available from a number of suppliers. While it is possible to clean the filter – a bottle of compressed air used for cleaning photographic negatives works fine – it should be replaced every year.

The two AA batteries which back up the CMOS Ram when the computer is switched off should also be replaced every year. The only other maintenance which should be attempted inside the computer is to ensure that all connectors are pressed in firmly. Do not apply undue pressure, circuit boards can be fragile.

The exterior of the computer and the monitor can be wiped with a damp cloth to keep it clean.

Screen cleaning cloths are available from computer and stationery suppliers. On no account use domestic glass cleaners to clean the screen of the monitor, as they may damage it.

Most mice can have the ball removed easily for cleaning by twisting the retaining clip surrounding the ball. Again, a damp cloth

should remove any persistent crumbs or pieces of dust. For a more comprehensive clean, the cover can easily be removed by undoing the screws on the bottom of the mouse.

A word of caution here: the screws on mice – and on many other parts of the machine – are *self-tapping*. If you don't replace them carefully, you will damage the thread permanently. The correct procedure for replacing one is as follows:

Place the screw in the hole and gently press down on it with the screwdriver, just to hold it in place. Slowly unscrew it by turning anticlockwise as you look down on the screw. At some point the screw should 'jump' down a thread. At this point it can be screwed into the hole – clockwise as you look down on it – and should go in easily. Never force a self-tapping screw.

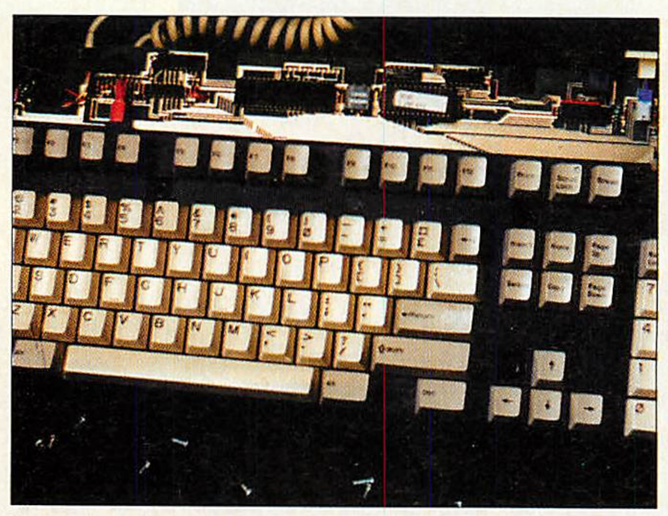
The surface of the keyboard can also be wiped with a damp cloth. Unfortunately, sometimes dust, crumbs and hairs find their way beneath the keys, spoiling contacts and causing keys to mysteriously stop working.

This can be cured, but you'll have to remove a lot of (self-tapping) screws to do it. First off is the back cover for the keyboard – eight screws. Then you can remove the front cover – between three and eight screws depending on the keyboard.

Once you have removed this the individual keys can be easily cleaned. A damp cloth can be used, possibly with a little soapy water, but don't get the rest of the keyboard wet. Dust can be blown out using a bottle of compressed air or a cleaning brush from a camera shop.

On no account use acetone or other solvents to clean the keys, as they will do their job too well and dissolve the keys.

In order to clean the electrical contacts underneath the keys, you will need to remove the circuit board from the back of the keyboard. You can only do this on one of the earlier keyboards, and it involves up to 16 screws, but if you do it you can then clean the electrical contacts behind the keys. Use a stiff paintbrush or lens-cleaning cloth to remove any large specks of dust and dirt. Tenacious grime can be removed by a tissue moistened with distilled water, but be very careful not to let water spill into the keyboard circuitry.



Keyboards can be cleaned with care, and much use of a screwdriver

The internal 3.5in disc drive can be cleaned with a cleaning kit, available from most dealers. A good way to minimise the amount of dirt and grime building up on and inside your machine is to buy a dust cover for the computer and the keyboard. You can even get keyboard covers which you can type through – useful for preventing accidental spills. Never cover the body of the computer while it is in use – you run the risk of blocking the fan and causing the computer to overheat.

Q I am trying to assemble some artwork using *Paint*, by overlaying several different sprites. I can't work out how to do this, as the 'Use sprite as brush' option seems only to paint in one colour.

Pete Morley
Padstow

I expect you have the 'shape' option set. This is controlled by the icon between the words 'shape' and 'name' in the *Paint* tool window, and is set by default.

It causes the outline of the sprite to be used as a brush rather than the sprite itself. After unsetting this option, you must click on 'OK' in the tool window, or *Paint* will not register the change.

Quick tips

The Filer

- Any file can be loaded into a text editor in Risc OS 3 by Shift-double-clicking on it.
- When moving through directories, double-clicking on a directory with the Adjust (right hand) mouse button opens the directory and closes the parent directory.
- Clicking with the Adjust button on the close icon of a directory closes that directory and opens its parent. This is useful for presenting a cluttered screen. Clicking with Adjust on the close icon of an editor's window will attempt to open the directory containing the file.
- Shift-clicking with Adjust on the close icon of a directory will open the parent directory without closing the original directory. This also works for files.
- If you open a directory by double-clicking with the Ctrl key held down, the filer will not run the boot files of any applications in the directory.
- The 'Newer' option available in Risc OS 3 from the 'Options' entry in the filer menu means that a file being copied will only overwrite an existing file of the same name if it has a later date stamp. This option is not available in Risc OS 2, which offers the choice between always and never overwriting when copying by use of the 'Force' option.
- Although filenames cannot include spaces – ASCII 32 – they can include top bit set characters. One of these – ASCII 160 – is a 'hard space' character which looks identical to a normal space, and can be used in filenames to give the appearance of a space.

Application design

Applications designed to run under Risc OS 3 should include a *!Sprites22* file, containing high resolution sprites, and ideally a *!Sprites23* file for use in mode 23.

When creating a *!Sprites22* or *!Sprites23* file from a *!Sprites* file, *ChangeFSI* can be used to do an 'intelligent' conversion between the modes. The result can be tidied up in *Paint*.

Although the tradition has been to call the main program in an application *!RunImage*, this can be confusing if you have several applications open at once, as you can accidentally overwrite the code for one program with that for another by saving to the wrong directory.

One way round this is to give the program the same name as the application, minus the pling sign at the start. An application *!DoThis* would then have a program called *DoThis* which will be a unique name.

Have you seen these CD-ROMs?



Countries of the World

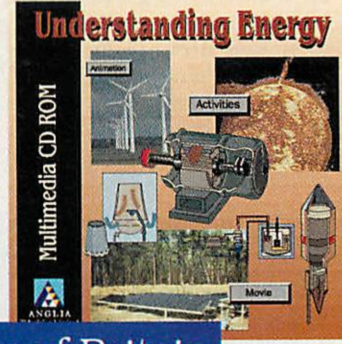
Garden Wildlife

Castles of the British Isles

Understanding the Body

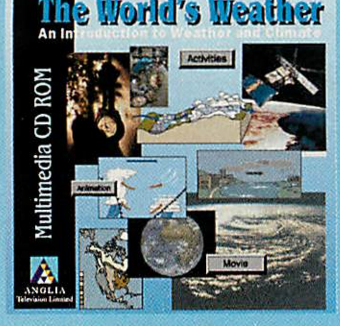


19th Century Biographies



Counties of the British Isles

World War II - On the Home Front



Art Store - Looking at Animals

Understanding Energy

The World's Weather



The Industrialisation of Britain

... and there's more to come

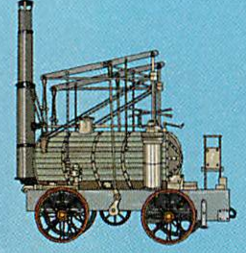
Anglia Television Education is well-known for the integrated KEY system which operates across the Acorn and IBM and compatible (Windows™ 3.1) platforms. It also now offers a wide and growing range of CD-ROM discs, created initially for the Acorn range of computers, and making full use of RISC OS facilities. Starting at just £25, these discs offer a rich experience for the classroom or home use. Map discs, for use with the KEY range of software, include many GIS (Geographical Information System) facilities. Stand-alone discs give hundreds of pages of information, covering topics from human biology to castles, weather and climate to art from the principal British galleries. Animations, video sequences, drawings, commentaries and clear text all combine to provide insight for the inquisitive mind. Activity sheets, timelines, databases, a selection of on-screen tools, glossaries, reconstructions and the facility to move materials to your own work area all add to the value of the discs.

For full details, phone, fax or use the coupon to obtain Anglia's catalogue. This will ensure that you receive the current list and regular mailings as the range grows.

The integrated KEY system from Anglia Television Education

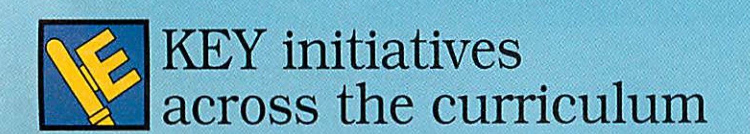


ANGLIA
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CD-ROM

The 1994 catalogue from Anglia includes details of the range of CD-Roms, starting at £25.00



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Not all products are available on both platforms: catalogue supplies detailed information

Acorn Customer Hotline

Essential information for all Acorn Users, compiled by Dave Walker of Acorn Customer Services

Questions and answers

When I try to access a CD using *PhotoView*, I get the error

```
CDFS::0.$.PHOTO_CD.OVERVIEW/PCD
not found;
```

what's the solution?

***PhotoView* is not finding the file containing the index information for the pictures on the Photo CD. First check that you have a Photo CD in your drive.**

Corel Professional Photo CDs do not have an *Overview* file on the disc; individual Image Pacs may, however, be accessed using *ChangeFSI*.

If your Photo CD is not a Corel disc and the *Overview* file cannot be found, consult your PhotoCD's supplier.

How do I delete an unformatted or non-bootable PC hard disc partition via the desktop?

To delete an unformatted PC hard disc partition you need to either format then delete the partition, or go to the command line (F12 from the Desktop) and type:

```
*SETTYPE <Your partition's pathname> Text
*DELETE <Your partition's pathname>
```

Is there a system variable which I can access to find out what the Currently Selected Directory (CSD) is set to?

Yes, provided you have Risc OS 3.1. the variable Fileswitch$ADFS$CSD contains the ADFS CSD pathname; if you use a different filing system, change the appropriate part of the variable.

More than music

CD-Rom is a wonderful medium for software which requires a large amount of resource data and there is now Photo CD, but you can play audio CDs too.

Most CD-Rom drives have an Audio Out connector which produces a signal suitable for feeding into an amplifier. Otherwise, most CD-Rom drives have a jack on the front for headphones. You can attach a pair of 'active speakers' of the kind used with personal stereos to this.

CD-Rom drives fully supported by Acorn's drivers are:

- Sony CDU6111, CDU6211, CDU541, CDU561
- Philips CM131, CM231
- Toshiba XM2200A, 3301
- Hitachi CDR1650S, CDR1750S
- Chinon CDS-431
- Apple CD300 (driver available from Acorn dealers)
- Photo CD is available using the Philips CDU541 (single-session only), the CDU561 and the Apple CD300 (multi-session).

Further drive and driver combinations are available from third-party suppliers. CD-Roms for DOS-based systems can be accessed directly using CDFS via DOSFS under Risc OS. *PC Soft* can access CD-Roms using MS DOS and MSCDEX.

Note that MPC discs cannot currently be played on an Acorn platform, as there is no support for a SoundBlaster-compatible card.

The vast majority of CD-Roms for all platforms are written using the standard ISO9660 or earlier High Sierra standard formats; CDFS can read both of these.

SIMMs for Risc PC

The Risc PC marks an enhanced level of conformance to popular standards for Acorn, in that DRam may be fitted as SIMMs (Single Inline Memory Modules).

Hence you can buy DRam for your Risc PC from many more suppliers, but make sure that the SIMMs you are considering conform to at least this outline specification:

- 72 contact pins, with 32-bit data
- Speed of 70ns or faster
- Physical size 108mm long, 36.2mm wide and 9.4mm thick
- Memory must be mapped as a 'square array' (same number of row and column addresses)
- 16 or less physical ICs on each SIMM
- DRam devices must support 'fast page mode' and 'CAS before RAS refresh'.

Further details on suitable SIMMs are contained in an Application Note, available via Acorn support channels (such as dealers). VRam (Video memory) is installed on proprietary cards, and hence is only available via Acorn and a smaller number of third parties.

Did you know?

Some difficulties in running new software may be the result of the software requiring the latest versions of relocatable modules. Current versions of some modules for Risc OS 3.1 are:

- ColourTrans 1.57 (Supplied with *Printers* 1.22)
- FPE400 4.03 (For users of the FPA10 Floating Point Coprocessor)
- CLib 3.75
- SCSIFS 1.10
- CDFS 2.21

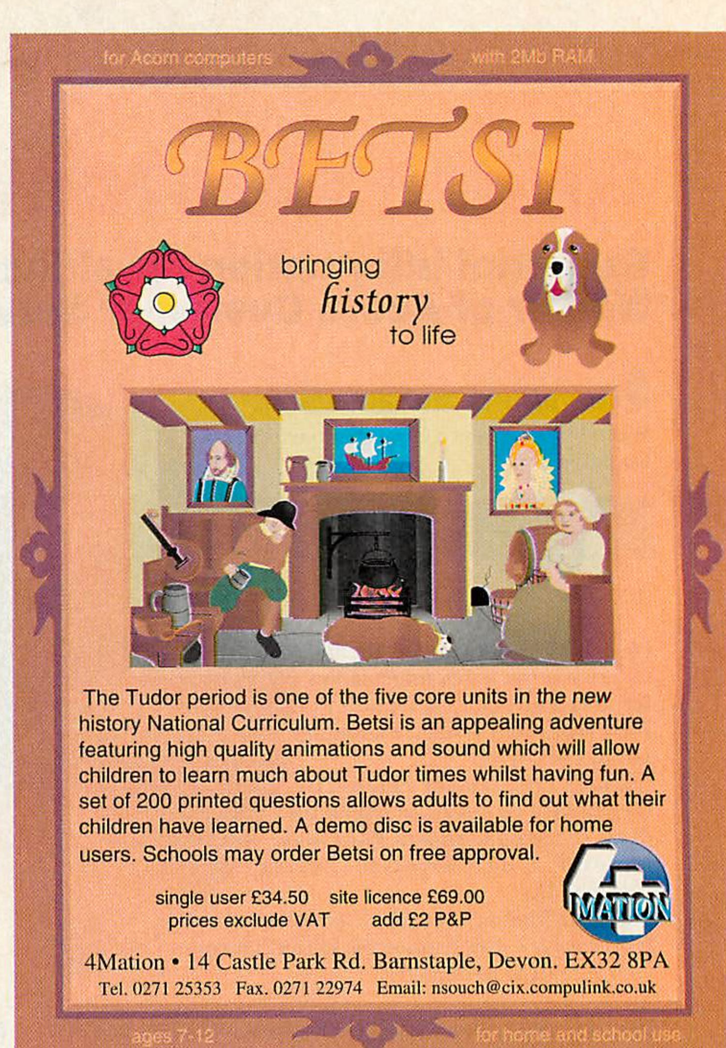
In the case of all except SCSIFS and CDFS, upgrades to these versions are available via ftp.acorn.co.uk, as well as via Acorn dealers. The latest versions of SCSIFS and CDFS are supplied as part of the *PhotoView* package, available from Acorn dealers as Product Code AKA35, price £34.95.

The latest versions compatible with Risc OS 2 are available as part of the Risc OS 2 Extras disc, available from the same sources.



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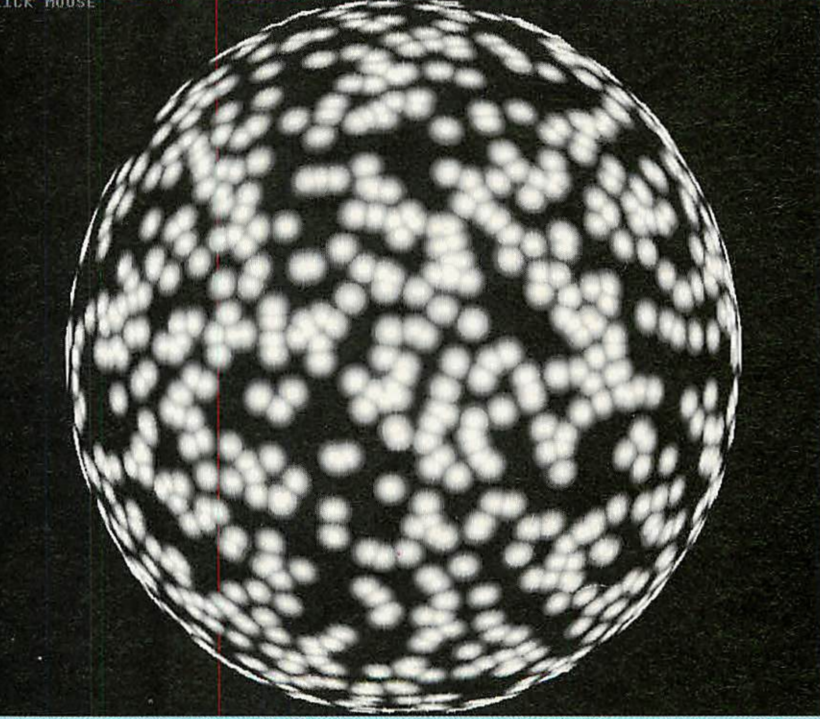

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Dave Lawrence and Dave Acton continue their monthly look at programs, for all Acorn Users

Whirled beater



Jan Van Mourik of Dyfed in Wales supplies two impressive graphic ditties to brighten our pages. The author describes how *Whirl* achieves its effect:

'*Whirl* is quite a simple routine involving a little mathematics. If you imagine a screen filled with vertical bars of colour, these are then twisted to an increasing degree towards the centre of the screen.

'Because the image displays a "point" symmetry, it is generated from the left and right simultaneously. Any image can be transformed in this way and the transformation is sometimes applied in morphing.'

The demo uses mode 12 or 20 depending on your monitor. The value of F determines the rate of twist. *Spheragate* produces an unusual 3D spherical image. Again mode 12 or 20 is chosen appropriately.

The image generated by this routine looks a bit like an agate marble. First a number of random points on the sphere's surface are defined and stored in the arrays A() and B(). These are equally distributed over the sphere's surface.

D% contains the number of visible points. These points are the centres of concentric coloured discs drawn onto the surface of the sphere. Their size is defined in Q%.

Because these circular patterns are mapped onto a sphere, some maths is required to calculate the orientation and position of ellipses. The image is generated in a palette with a rainbow set of colours. Click a mouse button and the image will then be shown in a grey-scale palette.

Author: Jan Van Mourik

Number crunchers

One of our regular Jans, Jan Vlietinck of Belgium, has supplied some spectacularly speedy bits of code to soup up your programs with.

Cordic was written, Jan tells us, as an alternative way of calculating hypotenuse lengths from Garry Hill's square root routine (*Acorn User* Feb 1994). The code needed is just 28 instructions in length, faster and more accurate to boot. It also doesn't require a look up table or any divisions.

For (x,y) (ABS(x) and ABS(y) must be less than 23172) the routine finds x/sqr(x*x+y*y), y/sqr(x*x+y*y) and sqr(x*x+y*y).

These values need to be found in many areas of programming (e.g. 3D graphics). The calculations are made using the (famous) *COordinate, Rotation, DIgital, Computer* technique, hence the name of the program.

The coordinates (x,y) are rotated until y=0. At the same time (1,0) is rotated in the opposite direction. The successive rotation matrices are of the form:

```
1        1/2^N
-1/2^N   1
```

In fact these are rotations together with a scaling. N varies from 0 to 16.

After each rotation the next rotation is either clockwise or anti-clockwise depending on the sign of y, with the goal of driving y towards zero.

When you have done this you end up with (sqr(x*x+y*y)/k, 0) and (x,y)/sqr(x*x+y*y)/k where k=0.607252935. So, if you start with k*(x, y) and (k, 0) you end with the desired values.

To make things even clearer, Jan has included a Basic version which operates in the same way as the machine code routine.

Jan has employed the same principle used in *Cordic* to produce fast SIN and COS routines.

Now we start with (k,0) and rotate until the point becomes (cos h,sin h). For this you need the angle of the rotation matrices which is:

```
dh(N)=ATN(1/2^N)
```

The rotations are now based on the sign of h(N+1) which is either h(N)+dh(N) or h(N)-dh(N) depending on whether h(N) is negative or positive.

The goal now is to drive the angle h(N) to zero. For more info, Jan refers you to *A floating-point VLSI chip for the TRON architecture* (Shumpei Kawasaki, IEEE micro, 0272-1732/89/0600, page 38).

Says Jan: 'As you can see the routine is quite fast, more then 10 times the speed of Basic and about as accurate'.

A boolean variable UNROLL is defined at the start. If TRUE, the inner loop of the routine is 'unrolled'.

Expanding the loop will greatly improve the performance on an Arm2 machine.

Indeed, on faster Arms there will also be a speed gain, although the code will not be quite as neat.

The Basic version – *CosSinBas* – which is functionally identical to the assembly language one, is also provided so you can see what's going on.

Jan's final offering is *Sqrt* – a super-fast square root routine. This is a full floating point version, taking a real x and giving a real result.

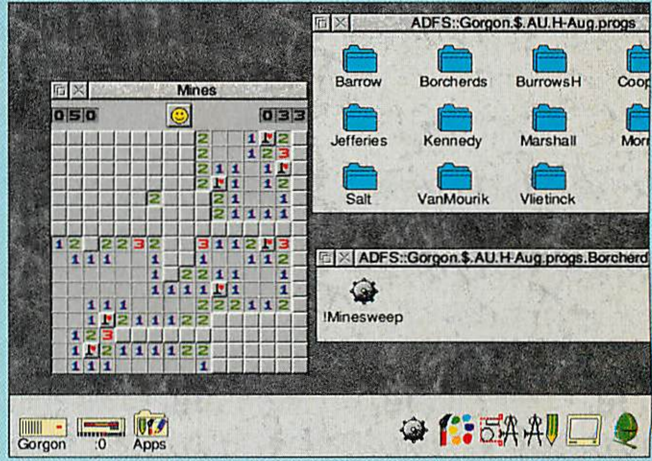
Although Basic is quite good at square roots, this routine runs about four times as fast and provides the same accuracy.

On Jan's A4000 it takes 0.5 seconds to calculate 50,000 roots and can manage the same in a mere 0.16 seconds on a Risc PC with Arm600.

Both machine-code and Basic versions are included in the listing.

Author: Jan Vlietinck

Mined out – again!



We have featured a number of versions of that 'classic' (well, it is now) desktop game *MineSweeper* in the past, so we promise Michael Borcherds's one will be the last for sometime. If you've been in outer space for the last couple of years, the idea is very simple – locate all the mines in the play area.

Click Select to 'tread' on a square. If it's a mine your game is over and the location of the mine is revealed. If it's not a mine you'll be told how many of the surrounding eight squares contain mines.

If there are no mines the square is uncovered but left blank. This effect cascades to adjacent squares, so clicking in the centre of a large unmined area will actually reveal the number of mines around its perimeter.

Once you think you have located a mine, click Adjust to mark the square with a flag. If you change your mind click again and the flag will be removed. There is a menu 'Q-marks' – when selected, you can cycle between empty, flag and a ? to mark uncertain squares.

In this version you can double-click Adjust on a numbered square when you think you have marked all its mines to tread on all the other adjacent squares.

The time taken and number of mines left is displayed at the top of the window, either side of the smiley face. This face is also a short cut to starting a new game.

Author: Michael Borcherds

Lite work

Nick Kennedy of Bristol is the creator of *LiteUtils* which provides a small but perfectly formed selection of desktop utilities. Fine keyboard control of mouse movement is provided when the application has been installed.

Either hold down Alt or select Continuous from the *LiteUtils* menu and use the arrow keys to move the pointer, Shift for 2x speed, Ctrl for 4x speed and Shift-Ctrl for 8x speed. To remember the mouse position press Alt-Ctrl-R. To go there press Alt-Ctrl-G. If you need to leave your computer unattended for a while but want to protect your work from prying eyes and hands, use the password facility. Simply enter your desired password off the Protect submenu and press Return. The screen will blank and the computer will be frozen until the password has been typed.

Finally, to get around the problem of having to resort to the command-line to *IconSprite a sprite file, you can simply drag it onto the *LiteUtils* icon. The screen will be refreshed to take account of any sprites that may have changed. You can also drag an Application onto *LiteUtils*. This is particularly useful if you use Ctrl when opening a directory (Risc OS 3) in which case *Sprite* files are not added to the sprite pool automatically. The Defaults option on the *LiteUtils* menu can be used to restore the default wimp sprites (Risc OS 3 only).

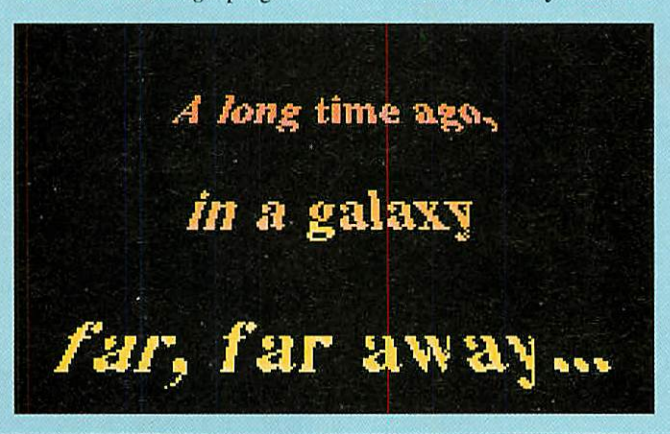
Author: Nick Kennedy

Scroll that text away

It's been a while since we carried a scrolltext-type program, but to be honest it's been a while since we've seen a good one. However, we were suitably impressed by Henry Burrows's *TextAway* (which bears no resemblance to a *Blimey – That's Good* product) for it to be included this month.

The program is pretty self explanatory – it scrolls text off into the wild black wonder *à la* introduction to *Star Wars*. The text to be scrolled can be found in the file called *Text* within the *TextAway* directory. Henry has supplied a few handy hints for getting the best from his program:

1. Keep the number of words on the screen at any one time low, and the shorter the words the better. This is because the poor program is having to do a lot of work to put the words in at various scales and angles, so it slows down when there is lots on screen.
2. Everything is automatically centred. If you want things to come out on the left, add spaces on the end of lines; insert spaces at the beginning of lines to move words right.
3. The program will terminate when the end of the message is reached; if you want it to repeat forever put a single * on the last line of the message. Pressing Escape is the only way to stop it running.
4. If you find the scrolling slows occasionally it could be that the speed is set too fast. Edit the *!RunImage* Basic program and set the speed% variable on line 120 to a higher value (lower is faster but you need a really quick machine or very little text to use lower values). Speed two is the default.
5. To use *TextAway* in conjunction with other programs, do the following: Set the TextAway$Dir variable to the directory containing your text and the *FontData* file. Call the *!RunImage* program.



for example:

```
set TextAway$Dir
adfs::TextAway.$.!TextAway
*!TextAway.!RunImage
```

TextAway will return control to the calling program when the message finishes (unless, of course, the last line is a single *).

If you get a Bad Mode error, switch to mode 15 and re-run *TextAway*.

If you're a hacker you'll be able to do lots of other useful things like changing the colour of the text, making the stars move about, adding a suitably atmospheric soundtrack, or whatever. Me, I'm happy with it as it is.

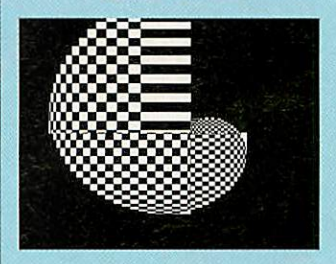
Author: Henry Burrows

One-line corner

Two examples of the art of cramming-everything-on-to-one-line this month, the first from Alex Cooper, aged 14. Yes, this is a visit back to planet Lissajoux, but Alex has given the effect of seeing the figures on an oscilloscope – their natural habitat!

No animation here, just a nice restful green pattern. Press Space to continue.

Author: Alex Cooper



Our second excursion comes from Simon Morris. His only words on his program *Strobe* are 'a graphical oddity' and who are we to argue. Move the mouse around the screen (slowly) to find lots of different effects. We have more from Simon in the coming months – this is just to whet your appetite.

Author: Simon Morris

Shift control

Here's an original utility from Paul Marshall (of *WorldTime* fame) which should prove absolutely invaluable to anyone working a shift, particularly if your shift pattern is complicated.

Paul tells us that it started out in 1980 on a home-made Z80 system but has been refined somewhat since then.

You simply define your shift pattern as a simple text file containing certain keywords.

Then drop this file onto the *Rota* icon and the current month's shifts will be displayed.

You can browse through the months ahead using the arrow icons, or enter a particular month and year (e.g. 'July 1996') in the writable icon and press Return.

Apparently the calendar is only correct up to around 2030, so watch this space for an update in 432 issues time.

The rota for one or more months can be saved as a text file from the root menu.

You can also print out the same information if there is a Risc OS printer driver present.

In either case, use the Months option on the menu to set how many months data to output.

A rota file can easily be created in *Edit*. It must contain certain keywords which define the shift pattern. Here is a summary of them, including examples:

```
TITLE Shift Rota for Mr O C
Woubit
```

This defines the title to be used in the rota window.

```
START 7 8 1994
```

The actual date of the first item in the pattern data *must* be a Sunday. The start date can be past, present or future.

```
FOOTNOTE Key: D=Day shift
0800-2000 O=Off o=Relief
```

This defines a footnote which is appended to all rota files saved.

```
SUB O off
```

Each day in the rota data must be entered as a single letter, so the SUB command is provided to allow 'macros' of up to three letters to be substituted. This means the rotas can be a little more readable. In this example, an O in the following rota data will appear as 'off':

```
ROTA 1   r r R R R r r
     1   O D D O O D D
     1   D O O D D O O
END
```

The first line of rota data should begin with ROTA. Each line consists of a number (how many times the pattern is repeated) and a description (one letter per day for that pattern). The list is terminated with END.

When *Rota* is first run, a rota file is loaded by default. Rota$Data is set to the name of this file in *!Rota.!Run* so you can alter *!Run* so your own shift pattern will be loaded automatically each time. A couple of example rotas are also included on the disc.

Author: Paul Marshall

Dimension jump



We have covered the principles behind stereogram pictures a couple of times in the last year, the latest contributions to the subject comes from Andy Jefferies.

He has sent us the first animated stereo picture – run *ASG_Anim* to show the sequence. If you're still struggling to 'see' one of these 3D pictures, this is probably the easiest one to see to date.

We think this is because it is animated and the brain has more information coming in to allow you to 'lock on' to the picture. The trickiest part of viewing this figure is ignoring the flickering colours which have nothing to do with the image itself.

This image also seems to be very 'robust' and can still be seen even after closing ones eyes (and opening them again!) for a number of seconds. Andy's second contribution is a mode 15 sprite – we have changed its name to *StereoPic* – see if you can see what it contains! This image is more like the printed posters available on the High Street in that it is made up from areas of colours rather than individual points.

Again, this image is very easy to see and in general 'clicks' very quickly. The brain is able to rationalise the two images from the left and right eyes much quickier as it has shape as well as colour information on which to shift and match the images.

If you're *still* struggling after these two examples perhaps there's no hope, but please do keep trying. We recommend looking at them in a room by yourself so as not to worry others as to why you're sitting two inches away from your monitor saying 'It must be a joke – there isn't anything there'...

Author: Andy Jefferies

Puffing away

Sorry, a very misleading title I agree, but the first go I had at using this utility did produce a puffin!

*INFO regular Darren Salt's latest contribution provides the ability to join objects together. This allows complex objects to be built and makes it easy to produce holes in objects.

By grouping text (converted to a path) with a large rectangle it is also possible to make letter cut-outs from a backing illustration or sprite. To use the program, select the paths you wish to combine and group them (with Ctrl-G). You may have several groups. Ensure they are selected and save them with the Save Selected object, but drag the *Draw* file icon to the *DrawMerge* application icon.

This will join together the paths within each group. The resulting objects will be exported back to *Draw* and will appear in another window. From there they may be transferred back to the original drawing. The merging process looks at each object in turn, starting with the object furthest back. If an object is not in a group or is not a path it is left untouched.

Within a group, path objects are merged in series until there are no objects in the group or a no-path object is found. A merged path object takes the properties from the first path in the original group. If, after merging, a group object contains just one object – the merged path – it is ungrouped.

Author: Darren Salt



Slob

The rather uninspiring title of this offering from David Barrow of Pontefract actually stands for *Spotlight On Britain*. It's a quick response, multiple-choice tour of Britain's cities, islands, rivers – well, everything really. So if you flunked your geography GCSE give *Slob* a good bash before the resits.

This is apparently the first major program David wrote for the Arc. Just double-click to run and Shift-Escape back to the desktop.

Author: David Barrow

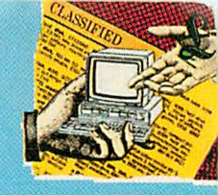


*QUIT

As always, everything welcome. Send to *INFO, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Name, address and program title on every disc please and include a text file containing same. An SAE will ensure your disc's return. All instructions, diagrams, examples and anything else useful or pretty also gratefully received. If your program takes a while to generate an image, please include a sprite showing the finished product.

Programming style: lower-case, meaningful variables names are best and no GOTOs please. Your program should be clearly laid out and run straight from the desktop if at all possible.



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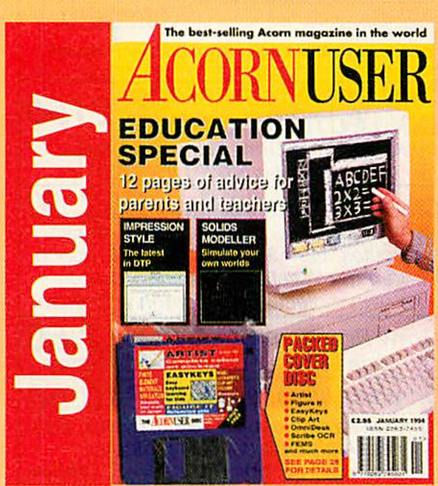
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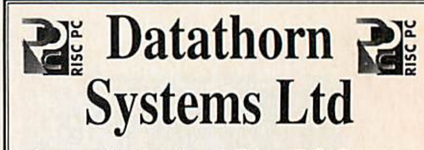


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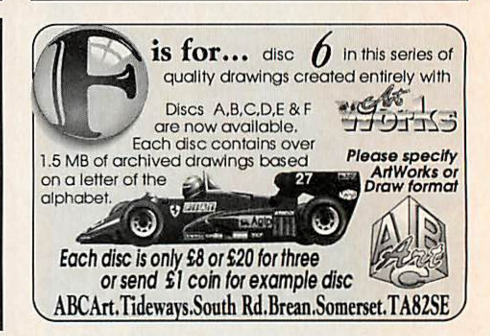


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Cyber Chess

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Cyber Chess is another classic game from leading games company, Fourth Dimension. Chess is probably the most popular game in human history. It has survived for 14 centuries and is as successful today as ever.

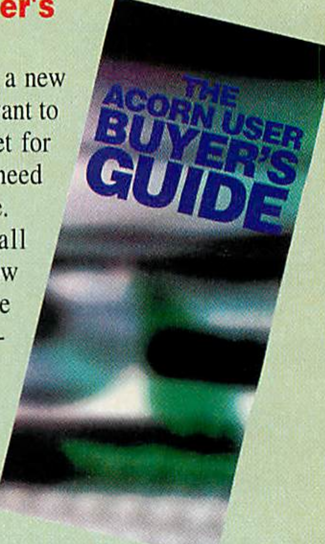
Now you can have the full magic of the game with *Cyber Chess*, one of the highest specification chess-playing programs available for any micro-computer.

This great game has superb 3D simulation, is Risc OS compliant, has full implementation of all applicable chess laws and is suitable for high spec machines. *Cyber Chess* also offers particular support for beginners and children, and good support for stronger players.

The updated, totally new Shareware disc

The Shareware disc has been brought completely up to date with the inclusion of the cream of today's Public Domain programs. Highlights include *DarkHorse*, the best screen saver ever... *Desktop+* to give you anti-aliased font on the desktop and solid icon dragging... *FYEO2* for superior JPEG and GIF conversion image conversion... *Palette* to replace the normal palette application... *TemplEd* template editor... *NewerLook*, which makes your machine even prettier than with Acorn's *NewLook*.

The Acorn User Buyer's Guide Book



If you're thinking of buying a new or second-hand machine, or want to know the best packages to get for your computer, then you'll need the *Acorn User* Buyer's Guide.

Packed with details of all Acorn's 32-bit machines... how to learn to use any software package in just a few minutes... a round-up of all the major software packages for your Acorn... contact details for all the major companies.

The updated, totally new Acorn User Education disc

A completely revamped Education disc for use in the classroom or at home. It contains an assortment of files for users to create worksheets for the top educational programs reviewed during the last 12 months... National Curriculum marksheets... templates for creating National Records of Achievement... tips for creating in-house documents including a school journal... CSV files to create a database... maps in *Draw*... fonts for DTP... templates for printing labels.



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Special SUBSCRIPTION OFFER

Here's some more information on... Cyber Chess

Cyber Chess is one of the highest specification chess-playing programs available for any computer. Some of the main points of this superb game are:

Superb 3D simulation

Cyber Chess is a near complete 3D simulation of the real game. Animation is used to move the pieces smoothly around the board; It is designed for total clarity. The board is carefully arranged so it can be played from without difficulty and a large 2D view is also provided as an option, with high-quality digitised stereo sound and speech.



Risc OS compliant

Cyber Chess runs from the desktop in a window; it is fully multitasking, intuitive and follows the 3D style associated with high quality software.

It is multi-windowed and any number of games can be run from one incarnation of the program.

A sophisticated internal scheduling algorithm allows *Cyber Chess* to drive all computer opponents/games simultaneously while still multi-tasking smoothly with other desktop applications.

High spec machines

Cyber Chess is optimised for an Arm2, mode 12 system, but takes full advantage of a faster processor or even extra Ram to produce a higher 'full strength' playing standard and smoother animation. It is thoroughly tested with Risc OS 3; supports saving of the desktop.

Rules

All of the applicable chess laws are implemented, including en passant captures, underpromotions, 50/75 move rule etc, even resignation and draw by agreement are supported.

Support for beginners/children

You can learn chess from scratch using the*Cyber Chess* tutorial supplied. There are 100 beginner levels provided, ranging from 1(very weak) to 99 (reasonably competent). When you beat level 99 you can graduate to 'full strength' mode. The teaching option shows you which moves are legal as you play and if a player gets stuck a hint can be requested. The names of the openings can be announced as they are played quickly, familiarising chess learners with the various opening systems.

Support for stronger players

Cyber Chess has a state-of-the-art chess algorithm and can perform analysis, giving the best line of play from the current position and an estimate of who is winning or losing and by how much.

There are full tournament time controls which can be set up. Time controls can be set for human players as well as computer opponents to simulate real tournament conditions.

The state-of-the-art opening book supports opening traps and advice. Multiple books are provided and new ones can be added or existing ones edited.Even the style of computer play (defensive, attacking, etc) can be adjusted to taste or to prepare for a match against a similar human opponent.

Subscription form for Acorn User

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Call now on 051-357 1275 or Fax 051-357 2813
quoting ref: AU/08/94 Mon-Fri, 9am-5pm

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THE MOXON INTERVIEW

JOHN REED

There is a train of thought that says one day all magazines will be provided on disc rather than on paper, and that the concept of a magazine will be altered forever by the arrival of multimedia.

If you talk to John Reed, founding member of the *Illusions Disc Magazine*, this dream doesn't seem that far off. *Illusions* is a disc-based magazine which has grown from humble roots back in 1991 – when John was just 13 – to a mature multimedia-based magazine with a large number of fans.

'*Illusions* was founded in 1991 by myself and Kaustav Bhattacharya, almost by accident,' says John.

'I had offered to do some of the programming for an application Kaustav was writing – which was initially called *Illusionist*, but changed when Clares released their package – but somehow we got around to talking about releasing a disc-based magazine.'

The rest, as they say, is history. *Illusions* expanded every issue and income from sales paid for adverts, which brought in more sales, which paid for more adverts, and so on.

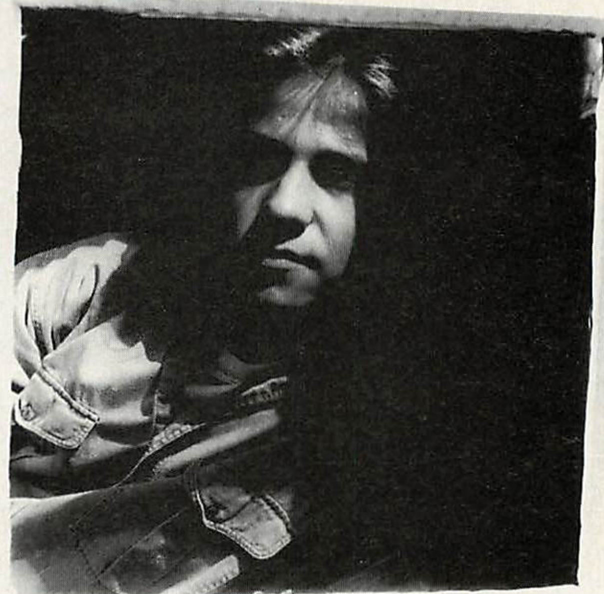
The front-end to the magazine takes the concept of multimedia to heart and allows articles to include pictures, animations, sound and hypertext links to other articles. So it's not surprising that running *Illusions* is no walk in the park – it's clearly a labour of love.

'The magazine is put together by users for users,' explains John, 'and although we try to deliver the highest quality product the emphasis is on sharing our experience rather than making it a major financial concern.

'No-one is making any money out of it, and taking the cost of advertising into account the magazine probably runs at a slight loss.

'Despite this we've never put the price up, and at one point we actually reduced it. The extra money comes from other ventures, such as our tutorials and recently the games hardware range.'





REGAN

'People want to hear good things about their machine, and can get quite upset if you start to overly criticise any aspect of it'

And running a magazine where everyone is doing it for fun rather than money can create some contentious opinions in the articles – the 'my job on the line' feeling disappears if you have nothing to lose. Perhaps that's half the appeal.

'People want to hear good things about their machine and can get quite upset if you start to overly criticise any aspect of it,' agrees John. 'I suppose this is true for any computer.

'However, this doesn't mean that we don't use other machines: we regularly compare software to that on the PC and Amiga formats, and usually find home-grown stuff lacking.

'Other than *Zarch* right at the beginning, and recently *Sibelius 7*, the Archimedes range has given little to the computing world outside its own small clique. On the other hand, *Impression Publisher* is forever being favourably compared with *Quark*.'

So what's the problem? It's not like the Risc PC can't knock the socks off the PC and Amiga.

'The problem is not with the hardware itself,' says John, 'which when sufficiently pushed can produce software to equal or better many foreign format titles.

'It's to do with how the Archimedes is percieved in the eyes of outsiders: because of the publicity (or lack of it) that has surrounded the Arc from the beginning, people will see the badge, realise it's not a PC, grunt the word "toy" and walk past.

'The size of the Acorn market is both a blessing and a curse. There's a nice, small, almost family atmosphere whenever you speak to anyone, and we can run up huge phone bills just chatting when we ring companies who quite often turn out to be husband and wife teams rather than huge faceless corporations.

'But whether this really makes up for the frustration you can sometimes feel when faced with the galling prospect of producing parts of a magazine on a different computer because yours can't cope is very much open to question.'

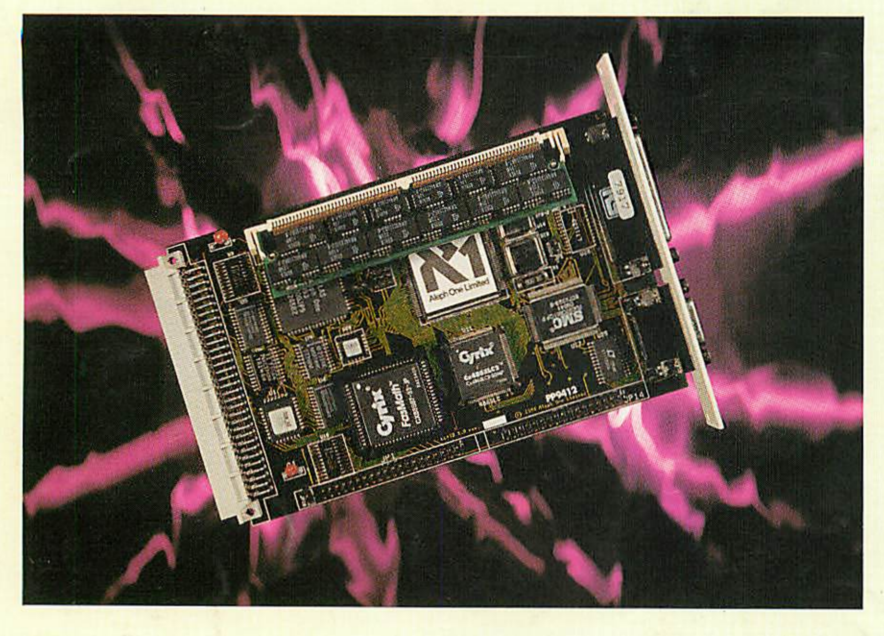
Still, John has great faith in the future of *Illusions* and the Acorn scene, but with reservations.

'Hopefully we'll continue to expand, and increase the profitability of the magazine,' he says.

'Perhaps one day *Illusions Disc Magazine* will be in every Acorn dealership around the world, required reading for anyone remotely interested in the Acorn Risc machines, but then again I don't think anyone will be holding their breaths.

'I do think though that everyone – Acorn included – should aim for higher things, otherwise the Arc won't get anywhere.'

Mark Moxon

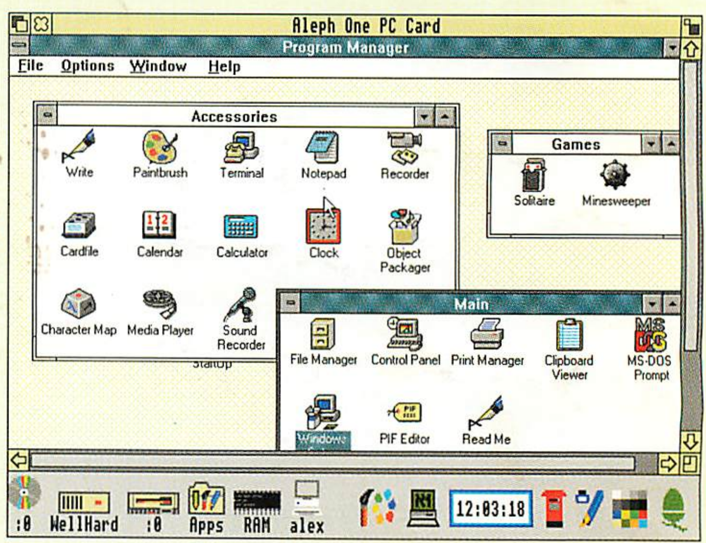




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Save money compared with the cost of buying separate systems: the PC card can use all your Acorn peripherals including hard discs, removable discs and CD-ROMs, Ethernet network cards and printers.

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The Acorn PC 386 and PC 486 cards, designed and manufactured for Acorn by Aleph One, offer economical 386SX or high-performance 486SLC processors for the Acorn A3020 or A4000 models.

All these products are available through Acorn dealers; Aleph One cards also direct from Aleph One.

Recommended retail prices

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